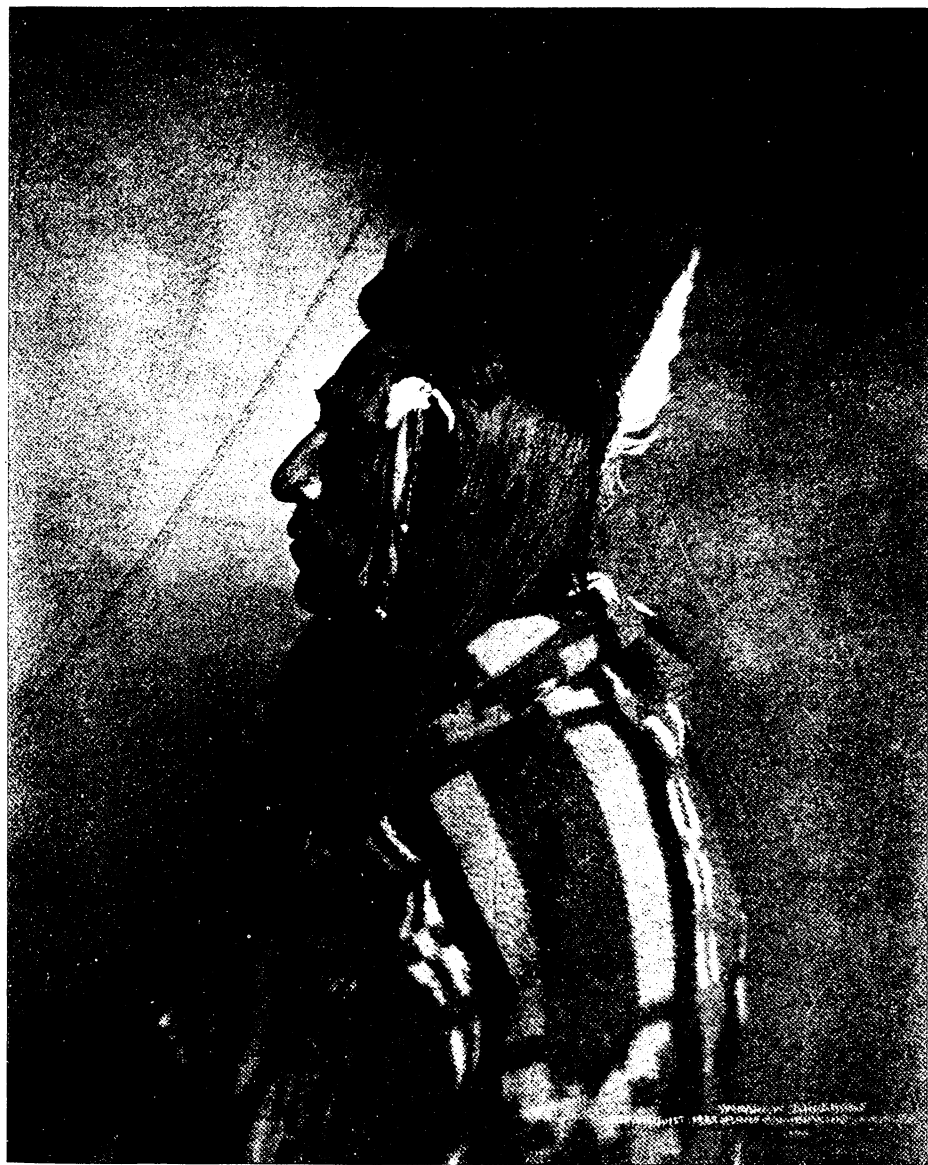




Dr. Angle's Paper—Fig. 3.



Dr. Angle's Paper—Fig. 4.



Dr. Angle's Paper—Fig. 5.



Dr. Angle's Paper—Fig. 6.



29. ELOTE, SUB CHIEF OF APACHES
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Dr. Angle's Paper—Fig. 7.



The California Relief Fund.

The Relief Fund for our California brethren is not growing as it should. Speaking in round numbers, about twenty-five million dollars has been raised for the general fund. There are about two hundred and fifty thousand people to be cared for. Thus the fund furnishes about one hundred dollars per person. Nevertheless the Mayor of San Francisco considers this so inadequate that he has announced his willingness to accept contributions from foreign countries. Let us apply the ratio to the dentists of California. At a conservative estimate there are five hundred who will need assistance. At one hundred dollars each the amount to be raised could be fifty thousand dollars. And the dentists of this country should raise that sum at least. We cannot at the time of writing furnish a definite report of what really has been raised, but the following figures will give an idea, and it would seem that the fifty thousand dollar mark is still a long way ahead of us. The ITEMS OF INTEREST fund is over \$5,000. The Chicago Committee have raised \$4,000. Dr. Dowsley writes that they have \$1,000 in the hands of the Boston Committee. Dr. Patterson, the treasurer of the National Committee, reports the receipt of \$50 from the New Haven Connecticut Dental Society, \$175 from the Kansas

ITEMS OF INTEREST

City Society, \$225 collected at the meeting of the Kansas Dental Association, \$100 from the Tennessee State Society and \$25 from the Arkansas Association. In addition, Dr. Patterson expects \$200 from the National Dental Association and \$300 from the St. Louis Congress Fund, unexpended. This makes the total, so far as is known to us, a little over \$11,000. We have not heard how large the *Cosmos* and Pennsylvania collections are, but hope it may be a considerable sum.

As each State Society holds its meeting, an attempt to raise more money for these, our brethren, should be strenuously made. As an evidence of what may be accomplished along this line, we are pleased to report more than \$700 contributed at the meeting of the New York State Dental Society, over \$100 of which was taken in a hat collection in which nothing less than one dollar was accepted. The following excerpts from a letter from Dr. Marshall, will give some idea of the needs of the dentists on the Coast:

In behalf of the California dentists I desire to thank you and all the dentists of the East for your sympathy and great interest in the relief of our suffering brethren. I consider myself as particularly fortunate at this time, for although I have lost nearly all of my personal effects, and the savings of a life time are tied up in the San Francisco banks, I am able to draw my salary on the first day of every month. Most of our poor fellows of the profession are worse off because their income has been cut off and their means of earning anything destroyed. Quick relief is what is needed. You should do that which will help them to help themselves. This is the policy of the present committee. Upon receipt of the telegrams from Dr. Van Woert, the president of the Odontological Society and from yourself asking if I would act as chairman of the local committee, I applied to my commanding officer for the privilege of serving in this capacity, which was cheerfully granted. Two thousand dollars has already been forwarded to the committee from Chicago. This will be extended to the most needed cases. We will find great difficulty in supplying new outfits for at least a month, as nearly all of the supplies of the dealers were burned and the individual dental supplies were all destroyed except those in my office. This small amount has been disposed wherever it was most needed. The dealers have supplies on the way, but with the congestion of the freight lines with Government and Red Cross goods it will be three or four weeks before anything can be secured. No one need

suffer for food or shelter, as these things are being distributed in abundance. All of the camps were organized by the military, so that now a complete system of relief is in operation in which the military Red Cross and relief committees are working together. The sanitation of the camps is as complete as possible with a class of people who know practically nothing of scientific sanitation and many of whom cannot understand the needs for such strict rules. If an epidemic of typhoid fever should develop, the people alone would be to blame.

It will be impossible to furnish you with specific data as to the losses of individual dentists, because they are scattered throughout all the camps. Some of them are acting as sanitary officers. I have been over the last San Francisco directory and find a list of 550 dentists practicing in the city, and twenty-five dealers. These dealers, I think it fair to say, employed at least five persons each, which would make 125 employees, which would give a total of 709 persons. I think it safe to say that from 600 to 650 of these were burned out. It has always been the custom in San Francisco for dentists to have downtown offices, and, of course, all such were at the mercy of the earthquake and the fire. Every dealer lost his entire stock; most of them had a little material on the way from the East, and with this they have opened up with true Western courage but with a reduced force.

Some of our confreres have come to me with tears in their eyes saying, "It is up to me to get out with a pick and shovel, for my office is burned and my practice scattered to the four winds of the earth." San Francisco had a population of 450,000 people, but not over half of that number now remains, and those that are here have no money to devote to the care of their teeth at the present time. The banks will not honor anything in the way of a check above \$100. This is, of course, necessary for the time being to safeguard the general interest. Many of our confreres will try to get away where the conditions will be better for practice than they are here. The dentists of San Jose and Santa Rosa have suffered also, as the earthquake did great damage there. As yet we have no information as to how they fared. Earthquake shocks have occurred since the 18th. On that day twenty shocks were recorded. Most of them, however, were of a mild type. We have experienced on an average of two every day since, but only one that caused any damage or loss of life. Our hospital, which accommodates only 500 patients, has been made to care for 600 or 700 at a time. The condition of the Presidio reminds me most forcibly of City Point, Va., on the James River during '64 and '65. The crowds of refugees, the wagon trains, the temporary warehouses, the steamboats and the mass of supplies being received and distributed

ITEMS OF INTEREST

has a veritable resemblance to conditions of war, but thank God it is not war, and the loss and suffering will soon be forgotten in the renewed struggle for life.

With kind regards to all my professional friends in the East, and with the assurance that the local committee will use the funds indorsed to us as wisely as possible,

Fraternally and gratefully,

JOHN S. MARSHALL,
United States Army.

Funds Collected by Items of Interest.

Owing to the fact that our last issue was delayed in order to make an appeal for aid for the California dentists, and that we hope to have the present issue appear on time, really but two weeks have elapsed since the first report was made up. Since then the fund has grown as follows:

Previously acknowledged	\$3,873.75
Additional subscriptions	1,290.75
Total, May 20	\$5,164.50

A pleasing incident occurred in the office of Dr. Ottolengui. A patient, overhearing a telephone conversation in regard to the fund, asked, "Are you collecting money for the dentists in California?" Receiving an affirmative reply, he then said: "Why, those fellows will need help more than anybody. The poorer classes will find work in rebuilding the city, but the dentists will practically have no business for a year or more. Will you let me subscribe one hundred dollars, and will you remind me in case I forget it?" Next day, the first mail brought a check for the amount with this pretty note: "Lest we forget, and let us forget. No acknowledgment desired." This gentleman has been served by a number of prominent dentists, and thus shows his appreciation.

The total subscriptions from dental dealers reported last month amounted to \$1,147.25. We greatly regret that the donation of the Excel Chemical Co. was made to read "Excelsior Chemical Co." the more so since it appears that a concern by the latter name has gone out of business. The Excel Chemical Co., we feel sure, will pardon a printer's error due to the haste in which the matter was sent to press. Additional subscriptions from dealers include a second donation of \$25 from the

EXCLUSIVE CONTRIBUTIONS

Borine Co., \$25 from Pinches Alloy Co., \$30 from the employees of Supplee's Dental Laboratory, and \$5 from the Central Chemical Co.

Additional subscriptions from the Local Societies swell their contributions to the following sums:

First District	\$473.00
Second District	457.00
Odontological	445.00
Eastern Dental Society (New York City)	227.50

At the annual meeting of the New York State Dental Society a fund was raised within fifteen minutes, by individual subscriptions which aggregated \$733.00.

Subscribers to "Items of Interest" Fund Since Last Report.

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Dr. G. R. Jenkins,	Dr. J. Ostram Taylor,
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Anonymous, Bklyn.,	Dr. W. H. Conner, Oklahoma.

New York State Dental Association.

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Dr. W. Jarvie,	Dr. W. A. Walker,
Dr. J. I. Hart,	Dr. Crogan,
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 Dr. Chas. Butler,
 Dr. J. Refsum,
 Dr. J. Q. Byram,
 Dr. G. V. I. Brown,
 Dr. Myron D. Jewell,
 Dr. S. J. Kennedy,
 And others.

(The above names were written so hurriedly by the Secretary that it is quite possible there were some errors in spelling and initials, which it is hoped will be excused.)

Subscribers to Kansas City Dental Society Fund.

Dr. J. P. Root,
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 Dr. Earle Hamel,
 Dr. E. E. Hughes,
 Dr. Claude Mayes,
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Dr. R. T. Thomas,
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Dr. A. F. Allen,
Dr. Pugh,
Dr. Theo. Stanley,
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Subscriptions to Kansas State Dental Association Fund.

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Dr. E. L. Marvin,
Dr. J. H. Selecki,
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Dr. A. C. Ewart,
Dr. E. E. Robyler,
Dr. W. G. Beitzel.

Methods of Filling Teeth with Gold Inlays.*

By DR. THOS. P. HINMAN, Atlanta, Ga.

Inlays for Fractured Incisors.

Where an oblique fracture exists on an incisor that involves both the mesial and distal incisal angles and pulp still remains alive, the cavity preparation is as follows:—Trim the labial margin of the fracture as little as possible. All that is necessary will be to smooth it and slightly bevel the labial enamel, so as to allow the matrix to slightly lap and avoid a butted joint between the gold and the tooth.



FIG. 25.

The fractures usually take with them a much larger portion of the lingual enamel than of the labial. Advantage is taken of this and the remaining portion of the lingual enamel is cut away nearly to the mesial and distal marginal ridges and as far down as the lingual pit.

The lingual pit is enlarged with a No. 5 bur and cut to a depth of 1-32 of an inch for the purpose of securing anchorage.

The enamel at the marginal ridges is cut to form a definite cavity margin, thus securing for the lingual portion a finishing line.

With No. 3 bur, an oblong pit is cut between the enamel walls on the incisal surface just inside the mesial and distal enamel; this groove running labio-lingually.

If the pulp is not too nearly exposed, cut a shallow groove between these pits on the incisal surface, thus completing the cavity. (Fig. 25.)

A strip of annealed inlay gold sufficiently large to lap all margins of the cavity is placed over the end of the tooth containing the cavity and pressed into position on the lingual side with a pledget of wet cotton.

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While it is firmly held in this position, the free end is made to lap the labial surface of the teeth by being pressed over it with the finger.

The piece of cotton is removed from the lingual side and the matrix held in position with the finger of the left hand, while the lingual side is burnished to fit the cavity floor and margins and well into the groove along the incisal surface. The matrix is removed and trimmed approximately and returned to the cavity. Reburnish the margins and floor and force the matrix well into all the anchorage pits, filling in with gold pellets, where tears occur.

Remove and thicken with 22K solder; return to the cavity and re-burnish well to the margin and let the matrix lap the labial wall about one thirty-second of an inch. Burnish the labial, lap well to the enamel.



FIG. 26.



FIG. 27.

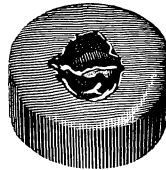


FIG. 28.

(Fig. 26.) Take an impression with modeling compound dry heated, wide enough to secure a model of the adjoining teeth. Chill thoroughly before removing from the mouth, for, if the compound be soft during its removal it is liable to change the form of the matrix, thus producing a misfit in the finished inlay. Run a model in sump, care being taken in separating the compound from the model that the matrix does not pull away from the tooth.

It has been found that compounds that require considerable heat to soften are best for this work, as they do not become very sticky when heated.

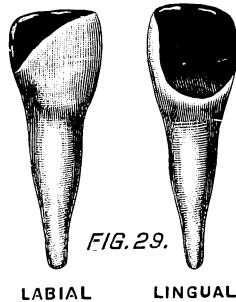
Restore the lost part of the tooth in hard wax, trimming the wax to the exact shape required in the finished inlay. Cut the tooth from the model. With annealed gold 1-1000 of an inch thick, cover the wax, burnish it down to a smooth surface, allowing the contour gold to lap well the label joint and bringing it around to the mesio and disto-lingual ridges.

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Cut the contour gold at its mesial and distal incisal angles and burnish it over the incisal surface of the wax, but not allowing it to lap the lingual surface. Cut off the excess of contour gold at these angles and burnish to a finished joint. (Fig. 27.) Invest in sump, labial surface downward, seeing that the investment covers all the contour gold. Wash out the wax thoroughly and see that the matrix and mold contains no foreign matter, such as pieces of investment, etc.

Flux the matrix and mold very carefully, painting them with creamed borax, using a small camel's hair pencil to carry the flux to place.

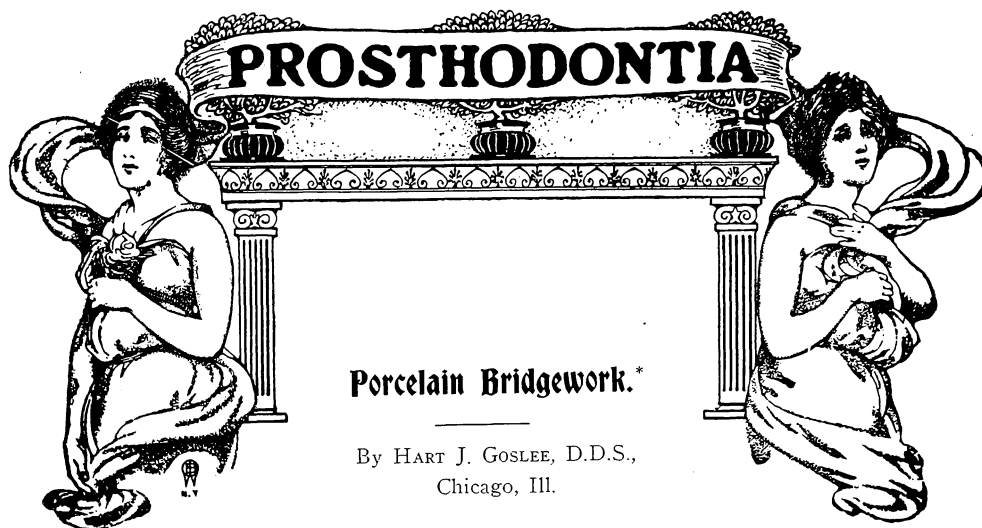
Trim the investment as small as possible. Heat up from below, filling along the labial joint first with small pieces of 20K solder and



then finishing with larger pieces. Fill flush with the edge of the contour gold. When sufficiently cool, plunge into water and remove the investment. The contour gold should not be melted, in a properly filled inlay.

Pickle in an acid bath, trim approximately and fit the inlay in position in the mouth. Polish approximate surfaces, allowing only a slight lap to the cervical borders. Roughen the inside of the inlay with a small bur, dry the cavity and mix the cement to the constituency of thick cream. Smear this in the cavity and on the inside of the inlay and drive to place. When the cement has thoroughly set, trim and polish. (Fig. 28.)

It has been observed that a dull finish such as imparted by pumice is the best for inlays.



This same general type of construction would also be equally applicable to the support of the four incisors by the two cuspids, or, in favorable cases, may even be further extended on one or both sides so as to involve the bicuspsids, but, in this latter connection it is well to remember that the practicability of porcelain bridgework diminishes as the size of the piece increases, and that small bridges will therefore be more successful than large ones, unless the latter are made in combination with gold.

Other typical types of construction where no saddle is employed, and which are more or less practicable, are illustrated in Fig. 345.

With Saddle. In such cases as demand the use of a saddle because of the necessity for gum restoration due to excessive absorption, the application must be made in accordance with all of the various requirements previously considered in connection with "saddle bridges," in conjunction also with those essential to porcelain work.

This type of construction in a typical case which involves the cardinal principles is illustrated in Fig. 346.

Posterior Bridges.

Notwithstanding the apparent objections to the saddle in "fixed" bridgework, and the tendency to avoid its use whenever and wherever

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ITEMS OF INTEREST

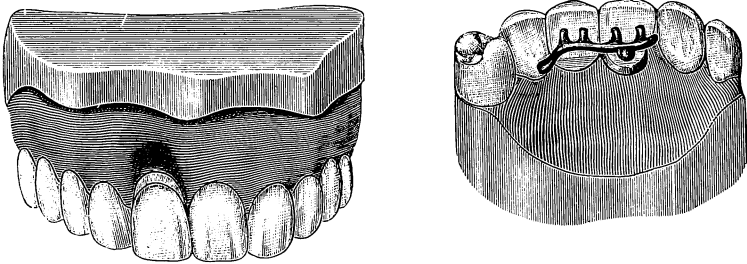
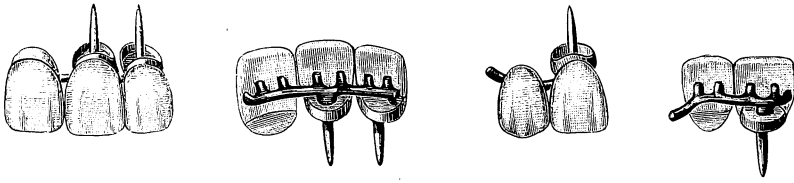


Fig. 345.

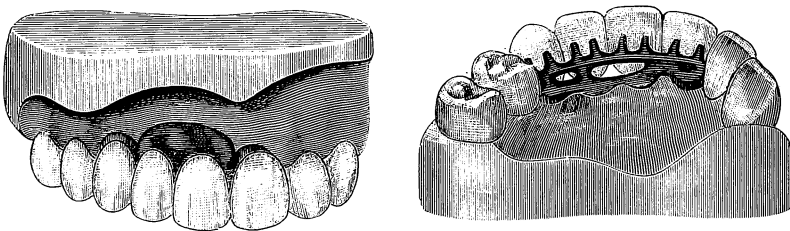


Fig. 346.

PROSTHODONTIA

possible, it must nevertheless be remembered that where the porcelain part of the structure is to be subjected to masticatory stress, some means of protecting and supporting it *must* always be provided.

Failure to properly appreciate and observe this requirement only means failure in the application of porcelain bridges to the posterior teeth. The type of construction which was employed prior to a recognition of this fact, but

Without Saddle.



Fig. 347.

which has been abandoned because of the proportion of failures which invariably presented, and in which the entire occlusal surfaces of porcelain became fractured and broken away by the stress of mastication, as a direct result of being inadequately supported and protected, is illustrated in Fig. 347.

Typical Construction.

For this reason it is apparent that if porcelain bridgework is to be employed in replacing posterior teeth, the use of the saddle is invariably essential to its successful application, and as applied to posterior bridges, about the only exception to the rule is in those simple and quite common cases where the second bicuspid is used to support the missing first bicuspid, and where the presence of cusps upon the tooth thus suspended is usually unnecessary. The type of construction which may generally be employed with success in this particular class of cases is illustrated in Fig. 348, but in the baking of such cases no effort should be made to entirely cover the projecting end of the connecting bar which supports the dummy, with porcelain, for it would be certain to chip or creak away unless made unusually and objectionably clumsy.

With Saddle.

While the details incident to the construction of posterior bridges in porcelain are, of course, subject to many modifications and variations, the saddle is thus essential, and the underlying principles are practically invariable, and may be elucidated in a general way by the presentation of typical cases.

**Methods
of Attachment.**

As mentioned in connection with the construction of anterior bridges, while inlays made of twenty-five per cent. platinum solder, or any of the various other forms of attachment to the supporting teeth which,

when also likewise made, may seem to offer opportunity for obtaining permanency, and may therefore be sometimes employed, the best results, particularly in posterior bridges where the stress is greater, will usually obtain from the use of either dowel or telescope crowns as the abutment pieces, for the reason that the durability of the piece is thereby increased.

When porcelain dowel crowns are to be employed

Dowel Crowns. on one, or both, ends the caps with or without a band, as may be preferred, should first be made and fitted in the manner indicated. When completed these should be placed in position on the roots and a plaster impression taken, from which the die and subsequently the counter die may be made. (See Fig. 299.)

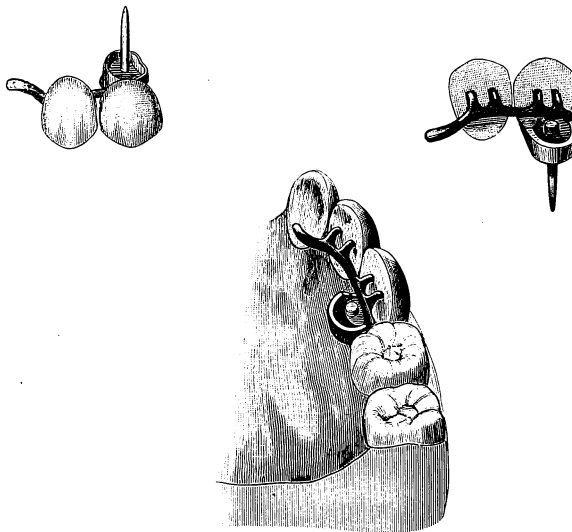


Fig 348.

The saddle should now be swaged of 30 to 32 gauge platinum, trimmed to the proper outline, fitted in the mouth with the caps in place, and then soldered thereto with platinum solder as indicated in "*saddle bridges*" in the preceding chapter.

When the metal framework is thus completed it should be placed in the mouth and the edges of the saddle burnished to a close adaptation to the tissue upon which it rests, after which the "bite" and impression should be taken.

The interior of the caps should now be filled with melted wax—in order to admit of their removal from the model—and the latter then obtained, the wax "bite" properly adjusted to it, and the case mounted upon the articulator.

PROSTHODONTIA

While the entire porcelain part of the bridge may be built up with "body," and suitably and more or less artistically carved, after making provision for its mechanical support by and retention to the base or substructure, the use of facings is universally recommended. Indeed, as a means of obtaining proper form and color, their employment, wherever possible, is essential to the achievement of the most artistic results.

When suitable facings have therefore been properly selected and are then ground to the required adjustment, they should be temporarily but securely assembled with hard wax, and the entire piece removed from the model and invested in accordance with the requirements.

The connecting bar, which should be of round iridio-platinum wire from 14 to 16 gauge, should now be fitted *under the pins* and as *close to the saddle and facings* as possible, with each end resting firmly upon the caps, and



Fig. 349.

when so adjusted each pin should be bent down until *in direct contact* with the bar. Where such contact is impossible a small piece of wire or plate should be snugly fitted into the space between the end of the pin and the bar, in order to facilitate soldering and to insure strength.

Owing to the difficulty of bending iridio-platinum wire of this size to conform to such adaptation, Dr. W. H. Taggart has suggested a means of facilitating the procedure by twisting several pieces of small platinum wire, such as is used in electric furnaces (28 or 29 gauge), into a "rope" of suitable size, and after adjusting this to the requirements, subsequently filling it in with platinum solder in the assemblage of the parts. This will answer the purpose nicely, but is scarcely as strong as a drawn wire.

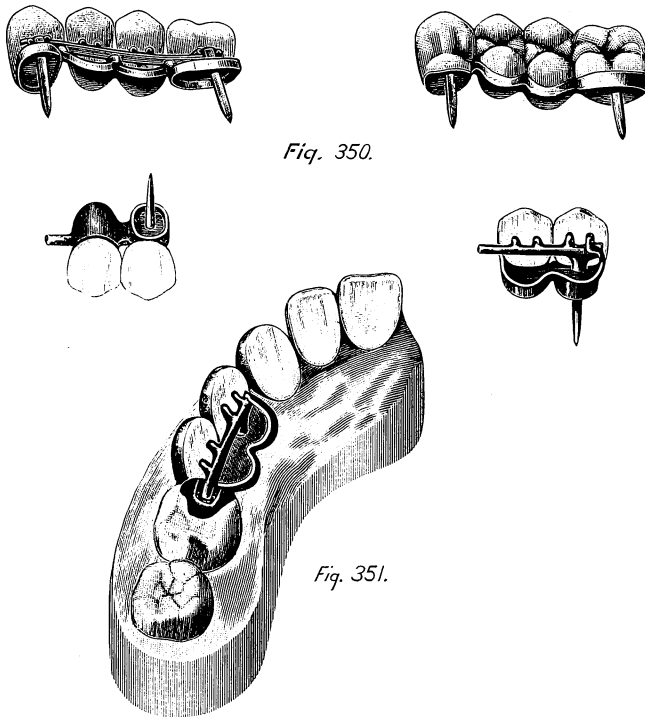
When the connecting bar has been thus adjusted, a means of insuring adequate support and protection to the porcelain which is to form the masticating surfaces should then be provided.

This may be observed to the best advantage by fitting small strips of 28 gauge platinum plate to the lingual edge of the saddle, immediately back of each facing, as also recommended in the construction of single crowns. These may be bent to fit more or less closely upon the saddle,

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and when soldered thereto will form a lingual outline for contouring the porcelain, and a cup-shaped receptacle for its support and protection. (Fig. 349.)

To facilitate the retention of these separate pieces in their proper relation to the saddle while soldering, they should be so adapted as to allow the extreme edge of the saddle to project slightly beyond them. This forms a narrow shoulder upon which the solder may be placed, and when the assemblage has been completed, this edge may be finished down to a flush and even joint.



The width of this lingual extension or support may vary from 1-16 of an inch to a distance equal to half the length of the facings used, or even greater, and may furthermore be swaged in one piece, by means of an impression and dies, if desired, but the former width is usually all that is required, and a better conformation to the form of the saddle can usually be obtained by using separate pieces instead of attempting to adapt a single piece.

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In effecting the final assemblage sufficient solder to make good joints and insure adequate strength should always be used.

This type of construction, which is applicable to short bridges in the upper jaw, is illustrated, in the metal and in the finished piece, in Fig. 350.

Another more simple application involving the support of a missing second bicuspid, by means of a dowel crown upon the root of the first bicuspid, and a support in the first molar is illustrated in Fig. 351. For the reason that the second bicuspid should usually be provided with an occlusal surface, the employment of a small saddle beneath it and of some form of support on the posterior end is therefore made necessary. This support may be obtained by allowing the projecting end of the connecting bar to simply rest snugly in a gold inlay or filling previously inserted

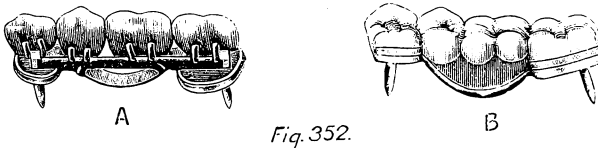


Fig. 352.

and grooved for its accommodation—as illustrated and mentioned in the chapter on “fixed bridgework,” or, it may be obtained by means of an inlay made of twenty-five per cent. platinum solder and constituting a part of the assembled bridge.

Convex Saddle.

Another type of construction involving the employment of a *convex* instead of a *concave* saddle, designed for purely hygienic reasons, may frequently be found useful, and is particularly applicable to the lower arch where considerable absorption has taken place, and yet where complete restoration, *bucco-lingually*, is not demanded.

In the construction of bridges of this character a half-round or “D” shaped iridio-platinum wire about 12 or 14 gauge, or smaller if desired, may be used, and the convex side should be bent or swaged on a metal model to conform as closely as possible to the ridge upon which it is to rest, and each end then adapted to a close joint with the caps.

Additional strength in the substructure is to be obtained by bridging in between the connecting bar and the saddle, especially toward the center, with small pieces of wire, previous to soldering, and indeed this feature is often essential in long bridges where this or any other form of saddle is employed. (Fig. 352 A.)

When the assemblage of the substructure is completed the porcelain is then built down to the edges of the saddle, both labially and lingually, but no effort to cover it should be made. (Fig. 352 B.)

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Telescope Crowns. In short bridges, and especially in the upper arch, where the *first* molar is used as the posterior abutment, the cosmetic requirements usually indicate the employment of a dowel crown, and yet, and particularly in more extensive cases where the *second* or *third* molar is to be thus employed, it is often best to use a shell or telescope crown upon this end of the bridge in preference to sacrificing the supporting roof to the extent demanded by a dowel crown.

Therefore whenever the cosmetic requirements will admit of, or wherever the mechanical demands seem to indicate the employment of the telescope crown on the posterior end, in conjunction with a dowel crown on the anterior end, such a type of construction should be used.

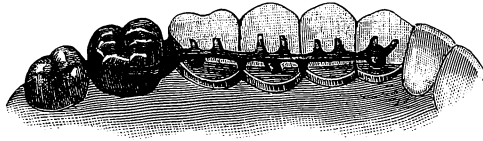


Fig. 353.

Platinum Crowns. Where such crowns are to constitute a part of the metal substructure before the porcelain is applied, it is obvious that they must be made of platinum, in order to withstand the heat of the furnace.

Furthermore, in order to be sufficiently strong, they should be made of at least 28 gauge platinum, and the cusps should be attached and adequately reinforced with 25 per cent. platinum solder.

When the crown has been completed in this manner, and in accordance also with the general requirements as previously described, the detail of procedure up to the final assemblage of all of the parts is the same as indicated for dowel crowns in the preceding type of construction, but, in the adjustment of the connecting bar it should be observed that strength is insured by the increased contact which should obtain between it and the band of the telescope crown.

This may be accomplished in fitting the bar by flattening one end of the iridio-platinum wire on the anvil and then bending it to conform closely to the lingual surface of the crown, thereby obtaining a maximum degree of strength in its attachment when soldered. (Fig. 353.)

Additional reinforcement of the cusps may also be obtained by fusing a layer of porcelain in them, from the inner side, when baking the piece, and if the color of the crown is not pleasing to the patient, such a fastidious objection may be overcome by heavily gold-plating the finished piece.

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In Combination with Gold.

The elimination of any possible objections which may be raised with regard to the color of platinum, together with the facts that gold is doubtless more pleasing to the eye; that *plating* is only temporary, and that the employment of the telescope crown upon such teeth as are somewhat removed from the range of vision, is advantageous, makes the combination of porcelain and gold in the construction of bridgework highly artistic and therefore often eminently desirable. Indeed, by combining the two

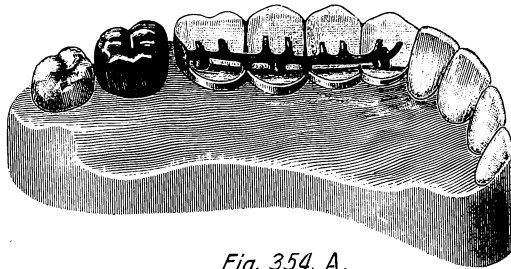


Fig. 354. A.

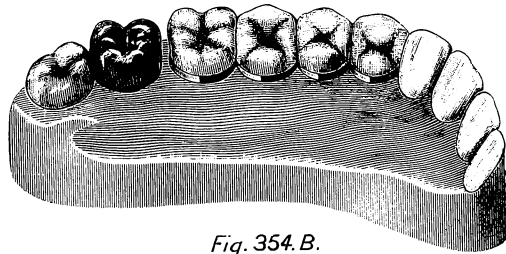


Fig. 354. B.

the possibilities of porcelain work are enhanced; the application of more extensive pieces is made practicable and the most esthetically ideal type of construction is achieved.

This combination may be easily effected by constructing such portions of the piece as must go through the furnace on a platinum substructure and in accordance with the requirements indicated, and then subsequently attaching the gold parts with solder after the porcelain piece has been entirely completed, and this procedure may be easily accomplished by simply making some provision for the attachment of the solder in the final assemblage, and entirely without danger of fracturing any part of the porcelain.

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Gold Crowns as Posterior Abutment Pieces.

Thus when it is desirable to employ a gold crown as the posterior abutment piece instead of one made of platinum, the procedure, as indicated, is identical up to the point of investing the case for the final assemblage of all of the parts, excepting that the saddle is previously attached only to the platinum cap for the dowel crown, at the anterior end, and that the gold crown is thus allowed to remain free and *in situ* upon the model during the completion of the porcelain part.

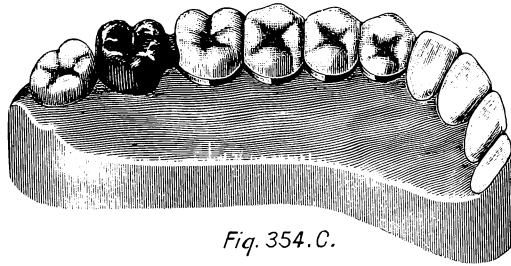


Fig. 354.C.

The platinum substructure, together with the facings which are to form the porcelain part of the piece, are then removed, invested and soldered as indicated, but at this time some provision must be made for the presentation of a well reinforced surface of platinum toward the gold crown, which will admit of subsequently attaching the latter thereto with gold solder. This may be effected by boxing up the posterior end of the piece with not thinner than 28 gauge platinum, and securely soldering it to the saddle, connecting bar and lingual support as illustrated in Fig. 354 A.





The Upper First Molar as a Basis of Diagnosis in Orthodontia.

By EDWARD H. ANGLE, M.D., D.D.S., St. Louis, Mo.

Read before the American Society of Orthodontia, Chicago, 1905.

Importance of Diagnosis.

Diagnosis in orthodontia, of course, precedes and is entirely distinct from treatment, yet it is of equal and, if possible, greater importance, for it must govern each and every step that follows. On it may depend weeks, months, and even years, of valuable time of both patient and operator, to say nothing of the inconvenience of patients, parents and friends as well, oftentimes, as no inconsiderable expense which sometimes means sacrifices as pathetic as they are heroic. On diagnosis should depend each hour in the treatment, and each appliance used—its form, structure, temper and tension, even to the last retainer. Yes, and even more, and far more serious than all of these, on the result of diagnosis must depend to no small extent the appearance and even the health of the patient for the rest of his life, for all our efforts make for the normal, which is health and beauty, or against the normal, which is the opposite of health and beauty, or deformity, for what is beauty but the absence of deformity? And last, in diagnosis is linked the very highest interest of the orthodontist—his reputation and ability—his very good name.

What could be more humiliating to a thoughtful, conscientious orthodontist than to daily encounter walking deformities of his own making? He may not often see them with the physical eye, but memory's vision

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he cannot darken. I can remember a few such cases most vividly—the result of unnecessary extraction from incorrect diagnosis—and they are the occasion of deep and lasting regrets.

If, then, diagnosis involves such responsibilities, what extreme care should the orthodontist give to it! How eagerly should he grasp every particle of knowledge that can give him light toward correct, intelligent diagnosis!

If there were but one type of face, how soon we would become familiar with its requirements—with its harmonies and all probable inharmonies, but we know there are no two faces alike—each patient so different in physique, in malocclusion and in art requirements; hence there has ever been great difficulty in making intelligent diagnoses of cases of malocclusion. The plan that has come down to us from its early dawn in the unfoldings of the science of orthodontia has been entirely empirical, depending wholly upon the judgment of the dentist. As there could be no definite aim nor end from such a principle there could be no definite result. Hence the result of such empirical methods has necessarily been widely differing and often most unfortunate plans of treatment. Now is there still no true principle to guide us toward a definite, intelligent decision—a correct diagnosis, so that we may start out intelligently on a course of treatment which we may follow logically toward a truly happy, successful end? Is it true that each person afflicted with malocclusion is so different from normal human beings—but “freaks of nature,” or “degenerates,” who must be dealt with according to the rule of “judgment” of the orthodontist, as writers of the old school would still have us believe? Has orthodontia, during all the marked progress that other branches of dental science have made, stood still, or at best only just emerged from the realm of superstition into that of conjecture—“guessing,” for judgment, as usually manifested in orthodontia, is only a more dignified name for guessing.

Now judgment at best, as you all know, is a very variable commodity, even among the judges of the Supreme Court, and if you want a more marked example of its variability you can easily have it by passing a model of malocclusion around among the experts of the old school and getting their opinions as to diagnosis, and you will find that these various and very variable “judgments” are usually about as valuable helps in the real requirements of the case as would be some of Mother Goose’s melodies for the same purpose. Dr. Ottolengui tried it and these various “judgments” are recorded in his journal. They make interesting reading. But among all the various and remarkable “judgments,” on one point you will find they have usually agreed in the past from the

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simplest case to the most complex, and that is that there must be some extractions, from a single tooth to even five, four premolars and a lower incisor, as advocated in the last writings of one of the "judges," as you will find in the July (1905) ITEMS OF INTEREST, and even then the writer complains that the mouth was still too prominent, which, being true, the wonder is that he did not keep on extracting in order to satisfy his "judgment." And another case is recorded in the last transactions of this Society where "judgment" required the sacrifice of six beautiful premolars and one fine first molar to reduce facial prominence, but without success.

Yet, notwithstanding that we still have "guessers" and "guessing" and "odontocides" linked together, one and inseparable, who juggle terms and meanings and furnish lots of evidence which won't bear sifting to explain the "guessing," with carefully devised loopholes as to meanings and dates and assertions, and will doubtless continue to have such with us for a long time to come; yet, I say, notwithstanding all this, we do have a simple principle to guide us to a correct, intelligent decision in diagnosis, which diagnosis is also a sure clue to a correct line of treatment, even to retention. A principle, too, which eliminates "guessing," is antipodal to both "guessers" and "guessing." It is a principle, too, so simple that experts are not needed to understand and interpret it, but any sincere student, no matter how humble, with intelligence enough to master the English alphabet can understand this principle and apply it successfully in diagnosis, and this principle applies to every case of malocclusion in existence in a human denture today, or that ever did exist. Indeed, every case of malocclusion carries with it this principle which is a key to its own solution, its correct diagnosis, and that key is the key to occlusion—the first permanent molars, or more particularly, as I shall show you later, the *upper first permanent molars*. I repeat that this key is not for the "guesser" or the would-be improver of God's laws, but for the student of occlusion—the interpreter of Nature's great law in the human denture.

To the members of the new school of orthodontia this key is familiar and in daily, yes, hourly, use, and its great value attested, so that to you little need be here said. Yet in connection with it there are some points which I shall present that may be of interest to you, for, recently, in the preparation of the MS. for another edition of my book, I have gone over the entire subject of orthodontia, reasoning and weighing as carefully as I could all the points bearing on its various phases, and I believe that I can offer a few additional proofs why the upper first permanent molar is the correct basis for diagnosis.



You know our friends of the old school loudly proclaim that the first molar is so variable in regard to location as to make it utterly unsuitable as a basis from which to reason; that it is located, as it were, by chance, having no connection with the facial requirements, and is a mere will-o'-

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the wisp which is in great danger of leading vast numbers of the younger members of the profession astray and to the committing of serious blunders with lasting regrets, as well as seriously handicapping the progress of orthodontia, etc., etc.

Now, if the upper first permanent molar were variable and unreliable as to its correct location, they would indeed be right and we would be wrong, but I shall try to prove to you that instead of varying so greatly from its correct location, it is, on the contrary, *if intelligently comprehended*, found to be in reality one of the most stable and unvarying points from a typical standpoint of our whole anatomy, therefore wholly trustworthy as a basis for diagnosis.

Eruption of the First Molar.

Let us study somewhat carefully this king of teeth which we have designated the "key of occlusion." Before the first molar erupts it is preceded by the completed denture of the child, which has developed normally under the most favorable conditions, for the food and habits of the child have been very simple and normal, with practically no pathological conditions sufficiently grave to prevent Nature from carrying out her plan of the normal in building the denture. So the deciduous teeth almost always erupt into ideal normal occlusion and the child denture is not only perfect in form, in part and in whole, but in location with the rest of the face and head, so that there is beauty, harmony and the highest efficiency. Dr. Anema has well said in connection with this thought, that the reason children's faces are in such perfect balance is because their teeth are in normal occlusion.

So, when the first molars erupt, they do so under the most favorable conditions, unhampered by predecessors or by those teeth anterior or posterior to them, the jaws having been lengthening for years for their coming, and instead of being in any way hindered in their eruption they are, on the contrary, *guided into and guarded in* normal position by the beautiful, normally built child denture anterior to them, as illustrated in Fig. 1.

The first molars have the largest crowns, best defined cusps, largest roots and strongest attachments to the alveolar process of any of the permanent teeth, and owing to their great size and their position in the jaws they are chief in the function of mastication. As the first molars are planted in the alveolar process long years before the permanent teeth, anterior and posterior, shall take their places in the line of occlusion, they have become very firm of attachment; so by their size and strength they can and do act as dictators of these teeth, and indirectly of all the other permanent teeth as they take their respective positions in the line of oc-

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clusion at their respective times. They also act as wise rulers, determining by their own length the length of bite, and in this way, in no small degree, decide the length of the face and the art relations, which, in importance, is best illustrated—and in a striking manner—by what the face misses in after years when these teeth are sacrificed, allowing the settling together of the jaws and shortening of the face, with consequent inharmony of facial lines, always so noticeable, and their wise control of the

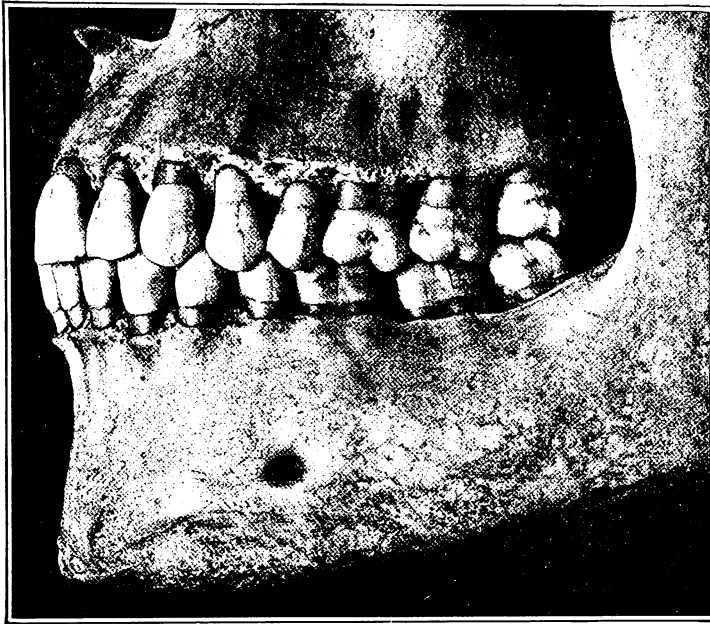


Fig. 2. (From the Collection of Dr. Chas. R. Turner.)

normal mesio-distal relations of the jaws by the locking of their well-defined cusps is a factor in the plan of growth and development of the face and jaws of mighty importance.

Up to the time of the coming of these teeth this important office was performed by the locking of the entire number of deciduous teeth, whose efficiency has been gradually lessened by the wearing away of their cusps and the otherwise weakening of these teeth by the absorption of their roots, but after the eruption of the four first permanent molars they must be not only the principal supports of the jaws and the controller of their lateral as well as mesio-distal relations for years, but on them, also, must

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fall almost wholly the burden of mastication. I wonder how many of you comprehend and appreciate the important responsibility that the first molars assume in controlling the relation of the jaws, mesially and distally, as well as buccally, which has been transferred to them by the wearing smooth of the cusps of the deciduous teeth. Little indeed can be the assistance given by the permanent incisors during or even after their eruption, toward controlling the normal mesio-distal relations of the jaws, but if out of their normal positions they may and often do act as hindrances instead of helpmeets. Not until long years after the eruption of the first molars do they receive support and assistance from their weaker brothers, the premolars, and not until they have faithfully borne the great burden and responsibility during the most trying period in the growth of the denture for six long years do they receive that real support from the second molars which it would seem they have so long needed; but by this time the great structure is practically completed, there only remaining to be added the tardy, erratic and not very important last members of the family, the third molars. Fig. 2 shows the permanent denture completed.

What a grand and important part has been the work of the first molars in the building of the human denture. They have, as we have seen, been the very foundation, the supports, braces and very guides in the growth and development of this grand and beautiful structure, whose importance is only equal to its marvelous proportions and efficiency. The dental apparatus is the most complicated of any of the organs of the body, for the other organs, like the eye or the ear, are simple organs complete within themselves, while the dental apparatus is many organs combined. The different teeth, the lips, the cheeks, the tongue, the nose, the throat, the palate, all have functions in combination, as well as separately, and all have common and very important interests in growth and development, which is continued in harmony, each contributing to the beautiful balance of the whole, if normal, or any one may through disease disturb the balance of the whole and malocclusion may result—a perversion of the normal.

Occlusion.

In building the human denture nature has worked toward a definite end, to produce the most efficient parts with the most efficient arrangement of these parts, that they may in function be most efficient. And this type has been Nature's pattern for the human denture as long as man has been man and had need of teeth. So normal occlusion has not recently been discovered, but only recently applied to orthodontia by some, and apparently not yet either discovered or applied by some others. And right



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here let me say that the coinage of far-fetched terms is unnecessary to express this beautiful condition of the teeth. It is perfectly expressed with just one word—occlusion (Ottolengui)—which always means the same thing, does not admit of juggling, and will henceforth stand out as the grandest word in dental literature.

That no two human dentures have ever been created that were exactly alike it is more than reasonable to suppose, since it has never yet been demonstrated that Nature ever duplicates her forms. No two trees of the same species have ever been alike; no two leaves on the same tree are ever just alike; no person's hand or foot, while of definite patterns, have ever been shaped exactly like those of any other person, nor have any two teeth of different persons, even of the same family, ever been counterparts one of the other. In every denture that Nature has ever created each tooth has differed from every other tooth of the same kind, and every dental arch has differed in size and form in a corresponding manner, just in the same degree that every other fiber and feature of every individual has differed from those of every other individual, yet blending in the whole into the greatest harmony possible to the *type* peculiar to the individual.

But these slight deviations from the general plan in individuals of species in trees, leaves, dentures, hands, feet, etc., are not abnormalities. They are nature and found in every department of nature, and the general form of the normal dental arches and the arrangement and placing of the different teeth with relation to each other in these arches—occlusion—is just as constant as the arrangement and placing of the five fingers on each hand and of the five toes on each foot. That there are occasionally six toes on one or both feet, or two thumbs on one hand does not alter the type of the normal foot or hand, nor does the appearance of supernumerary teeth, or the lack of teeth, or other dental abnormalities alter the type of the normal dental apparatus. So the criticism of Dr. Case that we are using a negro skull and not that of a Caucasian to typify the normal relations of the teeth—occlusion—seems trivial.

I have tried to make this point clear, for I am tired of hearing from men who ought to know better that there is no normal occlusion. I wish to make it plain that the permanent dental apparatus is, like the child denture, only a part of the type of the individual, and that it is always, in part, and in whole, and in location, harmonious with the rest of the head and anatomy and with the type, provided, of course, that the teeth are in normal occlusion, and I wish also to emphasize that in that case, no matter what the type (for Nature works in types), the mouth, so far as the teeth are concerned, will be in balance with the rest of the face. None of

you ever saw a face where the denture had developed with the teeth in normal occlusion in which the lines of the face were not in proper balance, at least so far as the teeth and jaws were concerned—the material to which our efforts for betterment are confined. If we are wrong and our critics right, why do they not show us well-authenticated cases? I do not believe such a case ever existed and I would go a long way to see one. How strange will this, one of their latest phrases, sound a few years hence: “In those cases where the upper molars have been inherited too far forward.”

**Influence of Type
on the
Dental Arches.**

Each individual is then but a variation of some well-defined type, and no special type has a monopoly of harmony and beauty. The short, stocky individual with round head will be found to have a dental arch in perfect harmony with the individual—namely, a well-rounded arch and short, broad patterns of incisors, which, in size, correspond with the rest of his frame. If the individual is tall, slender and angular, with long, narrow face, the dental arch will be correspondingly narrow and long, with greater angle of inclination of incisors which will be of a longer and narrower pattern and also varying in size to be in harmony with the rest of the framework. Nature does not “use her judgment”—“guess” in these matters, nor make mistakes, but works in accordance with her wise, long-tried and well-established laws. She does not assemble individuals with one long leg inherited from one parent and one short leg inherited from the other parent, or with a long, narrow head inherited from one parent on a short neck and squatty body, with aldermanic stomach, inherited from the other parent. Neither does she make an equally grave and silly blunder, as our old-school friends still believe she does, as to force large teeth inherited from one parent into small jaws inherited from the other parent, thereby furnishing a tempting excuse and opportunity for the “odontocide.” On the contrary, the offspring is like one of the parents or the other or both or neither, but different from both, as individuals have ever been, but with teeth and jaws and legs and faces and bodies in harmony with its type, just as its parents’ teeth and jaws and heads and legs are in harmony with their individual types. And this is not limited to the Caucasian race, but applies to the offspring of man of all races and in all ages.

Is it not remarkable that Nature should blunder in the relative sizes of the jaws and teeth in the permanent denture so often and never commit this same blunder in the baby denture, and would it not be just as reasonable to expect it of her in the one set as in the other, and is not the evidence just as conclusive in the one case as in the other?

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Indian Types.

I shall show you some Indian pictures (Figs. 3, 4, 5, 6 and 7) from slides kindly loaned me a few days ago by that great artist and student of Indians, Mr. E. S. Curtis, of Seattle, Wash., and in these pictures you will see the truth as to balance of the jaws with the rest of the anatomy just as clearly as it is exemplified in your own individual cases or in those of your children. I regret that I cannot show the occlusion of the teeth of these Indians, but as they are fine and sturdy specimens of their race which is noted for good teeth, it is reasonable to suppose they have all of their teeth, and that they are in normal occlusion is evident to all of you from the beautiful harmony of proportion of the mouth with the rest of the face.

One of the most remarkable of many remarkable statements made by one of the writers of the old school recently, is that the face may be so thin that to place the teeth in normal occlusion would be to deform the rest of the face by making the cheeks bulge out too much. Think of it! Think of a human being having a face so thin that an arch of average normal width, say two and a quarter inches, would bulge his face out of proportion!

But seriously, would it not be well for our old-school friends to furnish proof for some of their remarkable statements—real proof which could, if necessary, be investigated? Orthodontia has reached a stage, I think, when facts are really what are needed and not mere statements. And I am proud to say that the new school in its reports of cases, produces facts in the shape of fine reproductions of truthful models of life size or even larger (so that the occlusion can be easily studied), as well as fine photographs of faces and the entire head, not pictures of fragments of heads or microscopical pictures of models of the teeth which are practically worthless as evidence.

Variations from Normal.

So far, I have spoken only of the normal, for it is only by knowing the normal that we can have any conception of the abnormal. It seems to me that one great trouble with our critics is that they study malocclusion from the abnormal only and naturally get confused as to real facts, as well as to the solution of facts. Now we know that malocclusion of the teeth is but the gradual perversion of the normal during the eruption and locking of the teeth, and that this is due largely to simple mechanical means, for we have all watched its growth in all its various forms, from its simplest beginnings to its most complex forms, through all its possible three great classes with their natural divisions and subdivisions. We know every case has a simple beginning in its variation from the normal, and that very often a single tooth, from slight cause,

being deflected from the normal, may and usually does involve others. The dividing line, then, between the normal and the abnormal in the beginning is very slight, but always clearly defined, so the normal in occlusion is the only logical basis for determining the variation and extent of the abnormal—malocclusion. Very naturally, then, the treatment of malocclusion would be toward the normal, after first, of course, removing the cause; not assuming wisdom sufficient to improve on the plan of Nature, but beginning each case as early or as near the beginning of its



Fig. 8. (Cryer Collection.)

deviation from the normal as possible and simply assisting Nature in her plan in carrying out the normal. Then we will have the normal in result—normal in the number of teeth, normal in occlusion, normal in balance of proportion and in facial lines to be in harmony with the individual type—the greatest efficiency, the highest attainable beauty *for that type*.

Naturally, then, for the very wisest of reasons we use the first molar as a basis for our diagnosis, for, as we have seen, it is Nature's very corner-stone in the building of the structure (the denture), and we have noted with what zealous care as to time and place Nature, the great architect of the type, placed that corner-stone that the parts of the denture

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might be, when completed, not only in perfect harmony with the whole denture, but with the rest of the head and even the entire anatomy, just as she has been careful in the placing of other important parts of the head, as for example, the sphenoid bone, the eye, or the ear, that when all was completed they would be in harmony with the whole.

Influence of Type on First Molar.

That we find the upper molar to vary mesially or distally in its location with the rest of the skull in different races, tribes and individuals according to type is not surprising to men who have any knowledge of comparative anatomy.

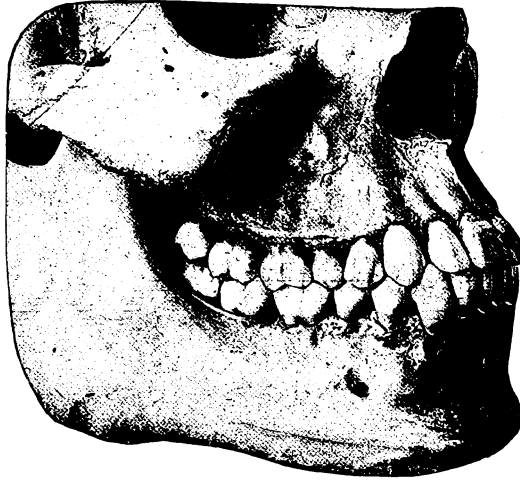


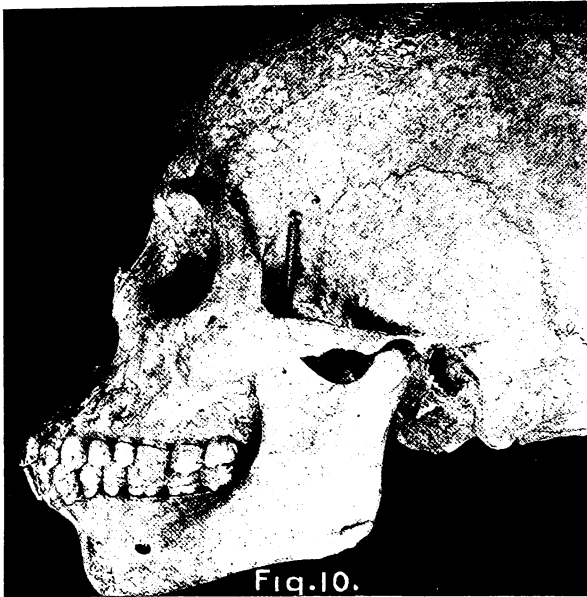
Fig. 9. (Broomell Collection.)

I will place on the screen a few pictures that you have seen used again and again in the dental journals recently by some of our critics of the old school in an effort to prove the unreliability of occlusion as the basis of diagnosis on account of the great variability in location of the first molars, and let us study them. Our critics have not been content with ordinary examples which we all daily see, but have gone to the uttermost parts of the earth in order to show the most pronounced types of variation; hence variability, and for this I am not sorry, for we want our position gauged with the strongest tests. Let us study these cases carefully and we will be able to read another story from that which our critics would have us read, and we will see that they not only fail to prove their point, but give us the strongest of proofs of the correctness of our

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own position—namely, the correctness of the location of the first molars according to race, type or individual, and more, of the typical patterns of teeth, and size and form of dental arches.

Let us compare the three skulls (Figs. 8, 9 and 10), which these pictures represent (Figs. 8, 10, 11 and 12 were kindly loaned me by my friend, Dr. Cryer, the author of the greatest of modern works on dental anatomy). First, we have the normal or best example of the normal in occlusion, so say our critics, and for the time being let us grant this, for



(Cryer Collection.)

it is a beautiful skull and the teeth are in beautiful occlusion and the plan of normal occlusion is beautifully shown. Let us note the type of individual which this skull represents—the straight line of the profile and general fine balance. It is said to be the skull of a Caucasian—probably an intelligent one, and please note the location of the first upper molars and their relation to the rest of the skull—how far distally they are placed, the upper third molar being partially hidden behind the ascending ramus. From the size and form of tooth patterns we may assume that it belonged to an individual of medium height and size and probably of regular proportions.

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Let us examine the picture of the second skull and denture, which, our critics say, is all wrong, because, they say, it is that of a negro and the teeth protrude too much. I say the teeth are more beautiful in pattern and more normal in occlusion than in the other skull, for the compensating curve of occlusion is almost straight in the first and normal in this, which is something of no small importance, and there is equally good proportion of balance and proportion of the teeth, denture and skull in this type as in the last skull with its type, and please note especially



Fig. 11. (Cryer Collection.)

the location of the first upper molar and how much farther forward it is in its location in relation to the skull than in the last picture, and how necessary, yet natural, that it be farther forward to be in harmony with the negro type, for it is said that this is a negro skull. And yet the negro type does not necessarily *always* mean the prognathous type, for I think we have all seen negroes with quite a straight profile line.

Now, note the third picture, one clear to the extreme in the type of man, the very lowest in the scale, one of the Fan Tribe of negroes, so low indeed that we may call him a beast man. But even in this most extraordinary type I think we still see with equal truth and clearness Nature's beautiful plan of normal occlusion, and of facial balance with type, as we did in Fig. 8 or Fig. 9. Let us remember that this man was close to the animal in habit, instincts, brain, body and type; probably knew just enough to eat, fight and reproduce his kind, and his skull and denture are in perfect accord with such a being. Look at his brain box. It is less in size than an intelligent child's should be at one year of age. He is just animal, and how clearly does the animal show, yet who dares say that in life this man with these bones clothed in wool and healthy

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muscles was not as normal an example of his tribe, or that his facial balance was less perfect for his type than these same bones and organs are for the respective types of our critics or of ourselves, or of that of the skull first shown? And who cannot see that every tooth is here needed and is in harmony with every other tooth, and that to destroy a single

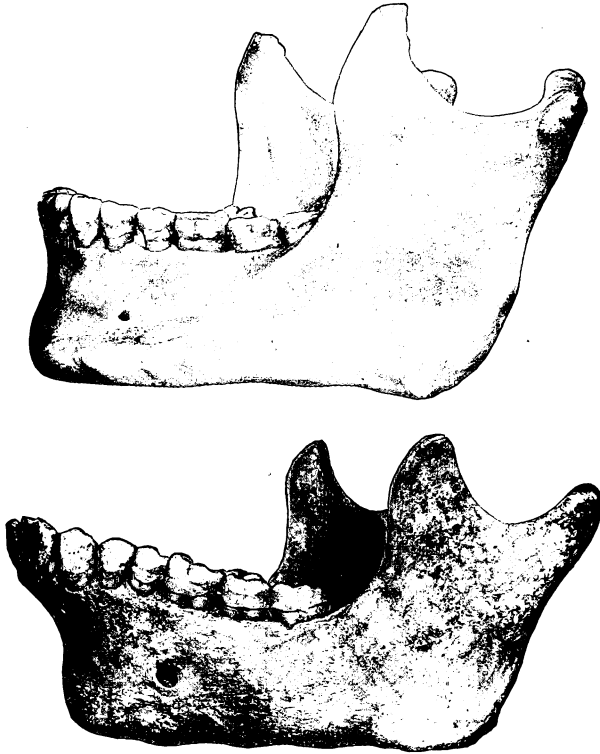


Fig. 12. (Cryer Collection.)

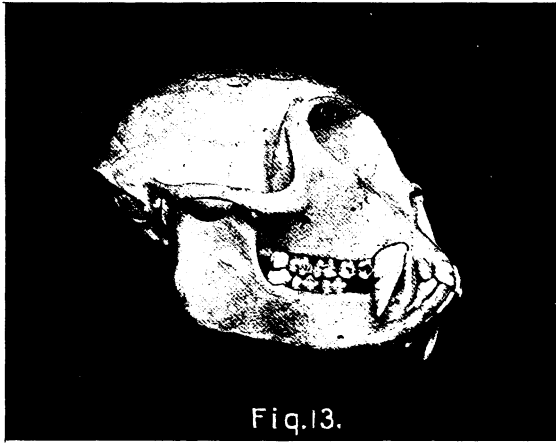
tooth would be to destroy the harmony and beauty of the whole? And please note the location of the first molars, how much farther forward they are than in that shown in Fig. 8 or even in Fig. 9, and why not? Yes, why not? The skull of the pug dog is vastly different from that of the beautiful greyhound, but is not each in perfect harmony with the type, habit and instincts of each individual dog?

Fig. 11 shows another view of the same skull shown in Fig. 10, from the occlusal aspect of the teeth and base of skull. It is placed beside a Caucasian skull from the same aspect. This, of course, our critics

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have used to show the marvelous difference—the great extremes in the teeth and forms of the arches, and to prove the variability of the position of the first molars, and consequently to accentuate their unreliability as a basis of diagnosis. Fig. 12 shows the mandibles of these two skulls and the same wonderful difference is here, also, clearly manifest.

Now, if I had looked the world over I think I could not have found anything more fitting as proof of the harmony of proportion and balance of parts as related to types and the correctness of my own position than

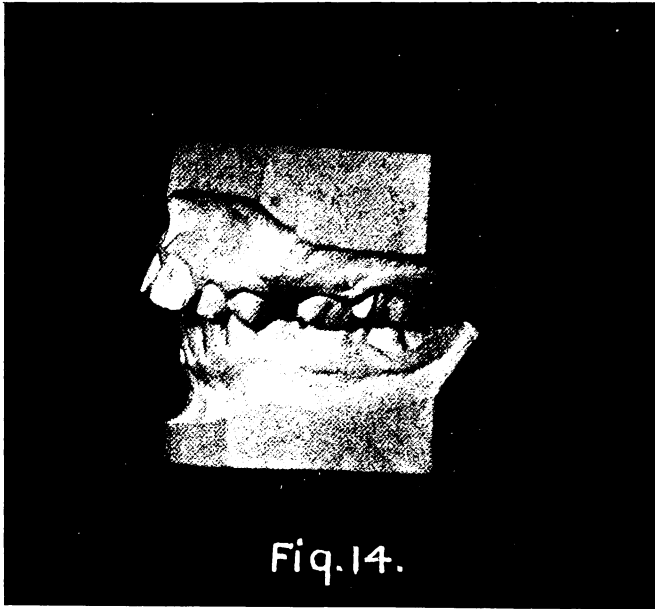


(Angle Collection.)

is shown in these last two pictures. Note the broad, short and very round skull of the one, and how beautifully the arch harmonizes as to form and size with that skull (and I have no doubt the whole type of the individual was in perfect accord with his skull), while with the other, note the extremely long and narrow base of the skull, with the animal development tremendously prominent in the back part of the skull, and note also the long, narrow dental arch, and how beautifully its proportion harmonizes with its type. Who can say which arch is the more perfect in its relation to the skull to which it belongs?

Let us now go further with the criticism of our critics than they have gone, and notice a fourth skull (Fig. 13) from my own collection, that of one of the anthropoid apes, and we will see the same beautiful principles of occlusion, the same beautiful accuracy of variation according to the habits and instincts of the animal and his type. And it would be just as wise to extract five of this brute's teeth and drag his incisors

toward his throat in the effort to make beautiful or even to improve his facial lines, as it would for his far-removed relatives, our critics, to treat their patients in the same way for the same purpose. And please note the location of *these* first molars and also how long and narrow is his dental arch.



In the lemur, which is still lower, these variations, according to type, are carried still further, and yet with the harmony of balance unbroken.

Mesial Position of Molar Explained.

Another criticism of some of the oracles of the old school is that the first molars are inherited in a position farther forward than normal, or that they are found farther mesially than normal on account of premature loss of the deciduous teeth—more “guessing” instead of reasoning, for practically never are they inherited farther mesially than normal unless in freaks, and their mesial position as a result of mutilation of the deciduous teeth is but temporary. Now this is what does happen. If the first molar does move forward into the space of the deciduous second molar it does precisely, though *prematurely*, what it would do and must do ultimately in the growth of the jaws and denture

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in order to permit the second and even third molars to take their positions in the line of occlusion. So it would finally not be abnormally placed, but those teeth of the permanent set anterior to it would most probably suffer as to position as they erupted and tried to gain position in the line of occlusion, for the reason that the alveolar process would not have been normally stretched in anticipation of their coming on account of the deciduous teeth being gradually carried mesially by the eruption of the permanent molars, as they would be had not the deciduous molar been removed.

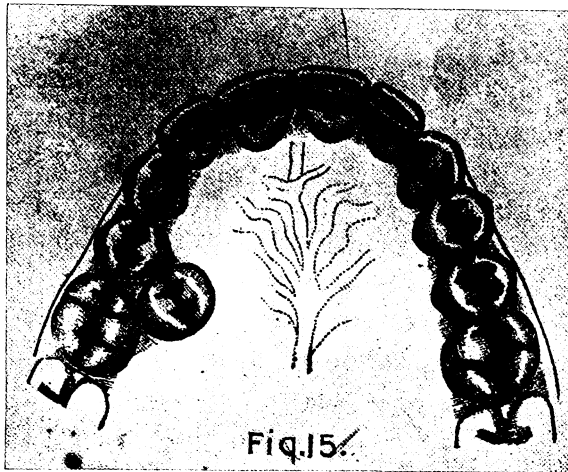


Fig. 14—a cut kindly loaned me by Dr. Lourie—shows such a case as the one in question. The lower molar is made to lock in distal occlusion by reason of the premature mesial movement of the upper, and the distal movement, to some extent, doubtless, of both the lower molar and the mandible.

It is easy to realize what will take place later on the eruption of the bicusps. Fig. 15 shows such a case, and probably there is no one here who has not seen similar cases, but you can readily see that the molar is not mesial to its normal position, although it took this position prematurely, just as the first molar, as shown in the last picture, is now in process of doing. I have seen many such cases and never one that I can now recall where the first permanent upper molar had been made to travel mesially to its final normal position. Dr. Ketcham has shown me a slide representing a similar case today, and doubtless you all have models representing similar conditions.

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Beauty versus Usefulness.

And here is another criticism coming from two of the eminent members of the old school last heard from, although I cannot believe this opinion is shared by any considerable number of them. It is to this effect: That we of the new school do wrong in placing efficiency of the teeth before beauty, instead of making beauty the goal to be sought for in treatment, as they do. Now think of it! Was the dental apparatus made principally for the adornment of the face, and incidentally, possibly, to eat with? Not in all living nature, either plant or animal, can I recall a single instance where utility in an organ is not placed before ornament. Even in the most beautiful flowers beauty is only a means to an end. The birds of gayest plumage are not made deficient in beak that they may be given fine feathers for selection in mating and the reproduction of their kind. Then why should so very important an organ as the dental apparatus in man be mutilated in the false notion that his beauty is thereby enhanced, when in man beauty is not essential to procreation nor to his intellectual capacity, and at best is feeble and fleeting? Now, in reality, with the new school, beauty and the highest efficiency go hand in hand, and when we have fulfilled our mission by helping nature to complete the normal in type we will have, incidentally, the greatest beauty possible as the result of our skill.

But why note such criticisms further when there are so many problems of great value to the orthodontist to be carefully and patiently weighed and balanced before orthodontia is universally recognized, as it must and will be—the grandest and most important work relating to the human teeth than any one can or will engage in.

So far in what I have said relating to the first molar the upper and lower have been regarded as of equal importance, as they should be, for in function of mastication they are equal, as well as in influence upon the rest of the dental apparatus during its growth and development, and they should be of equal importance in diagnosis, *but only when they succeed in locking normally* in their mesio-distal relations. But owing to the fact that the lower molar is dependent upon the caprices of the migratory mandible, it is in consequence less reliable than its sturdy, though somewhat smaller, but far more steadfast antagonist. For this reason the upper first permanent molar becomes the true basis of diagnosis.

Discussion of Dr. Angle's Paper.

**Dr. F. M. Casto,
Cleveland, Ohio.**

The paper which Dr. Angle has just presented treats of a subject of very great importance. His position regarding the upper first molars is shown beyond the question of a doubt. The lucid and specific manner in which he has presented the subject signifies two things: First, that his conclusions are based upon both scientific research and the observation of a great many practical cases; second, that he does not intend to be misunderstood.

We all recognize that in order to properly classify and intelligently diagnose cases of mal-occlusion, we must have some fixed point which is constant in its relation to the bones of the face. I mean, of course, as constant as any anatomical structure can be. Dr. Angle claims the upper first molars represent such a fixed point. He gives us logical reasons why it is so, and presents numerous documents to substantiate his claims, and I believe him. If I did not, I would practically be compelled to denounce his classification of mal-occlusion.

The members of the so-styled old school condemned this classification because of their claim of the instability of the upper arch in its relation to the physiognomy, saying that in one case it might be placed too far anteriorly, while in another it might be too far posteriorly, yet the occlusal relations would be the same in each. That is to say, by viewing the models of such cases the occlusion of the teeth would be in the same relative position mesio-distally. These men have also woefully misunderstood the classification, so far as the upper first molars are concerned, from a diagnostic standpoint. Only recently an article was published in one of our leading journals in which the statement was made that we of the new school claimed specifically that whenever the upper first molars erupted in a normal position mal-occlusion of the teeth would not, nor could not occur in the completed denture; that to have these teeth (upper first molars) in a normal position is entirely incompatible with any mal-occlusion. We do not make any such claim at all. The first molars may, or may not, be in a normal position in the "Class 1" cases of mal-occlusion, but they must be in a normal mesio-distal relation to the lower first molars. I think the writer of that article was confused by the statement in one of our text-books to the effect that the entire arrangement and occlusion of the dental arches are determined by the eruption of the lower second bicuspid. If they erupted normally there would be no mal-occlusion, if abnormally there would be mal-occlusion.

I have observed a few cases of mal-occlusion in the temporary teeth, cases in which the mesio-distal relation was abnormal. I have at the

present time a case under my observation in which at the time of the complete eruption of the temporary teeth there was inclined to be a distal occlusion of the lower arch. The mandible was underdeveloped. The lower molars did not erupt until several months after the upper molars had erupted. I notice at the present time, it having been about ten months since the denture was completed, that the mandible has developed more in proportion to the upper jaw, and the distal tendency is being corrected. The mesio-distal relation now is practically normal. Consequently I believe that the mandible does not develop as rapidly as the upper jaw in some cases, and therefore there is a tendency to distal displacement of the lower arch, which may be corrected at the age of five or six years, after more development of the mandible has taken place. Of course, if development be retarded until the first permanent molars erupt, and firmly lock the occlusion, then that is another proposition altogether.

From what we know and understand about the development of the jaws and process, and especially that which pertains to the forward movement of the arches for the accommodation of the second and third molars, Dr. Angle's position in regard to the mesial displacement of the upper first molars, when due to the premature loss of the upper temporary molars, is indeed well founded. I understand his claim is this: That the mesial movement of the permanent upper first molar, due to the loss of the temporary second molar, is only premature; that in the completed denture it (the first molar) will occupy the same position as when the temporary molar had remained intact the required length of time, or until it had been supplanted by the second bicuspid; that is to say, the normal forward movement of the arches would move the first molar mesially to the position it now prematurely occupies. For example, let us assume that we have a case in which at the age of eight years the second temporary molar on the right side had been lost, and the first permanent molar had shifted mesially from its normal position. On the left side the temporary teeth had all been normally retained, and lost. Now in this case Dr. Angle claims that at the age of sixteen or eighteen years the upper first molars on both sides will be in a normal relation with the balance of the bones of the face, but that there will be a lack of development of the jaw anterior to the first molar on the side where the temporary molar had been prematurely lost. I think he is right. I know he is right unless the present theory of development can be overthrown. He does not say, however, that it is absolutely impossible to have a condition in which the upper first molars are too far mesially, but concedes that there may be some such cases, although extremely rare.

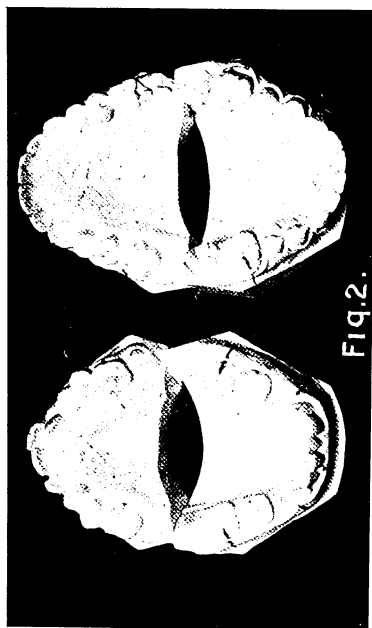


Fig. 2.

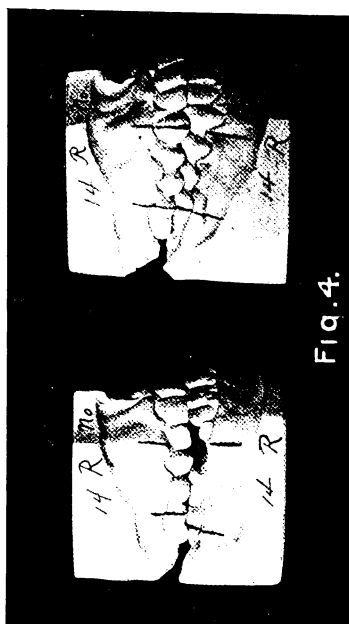


Fig. 4.

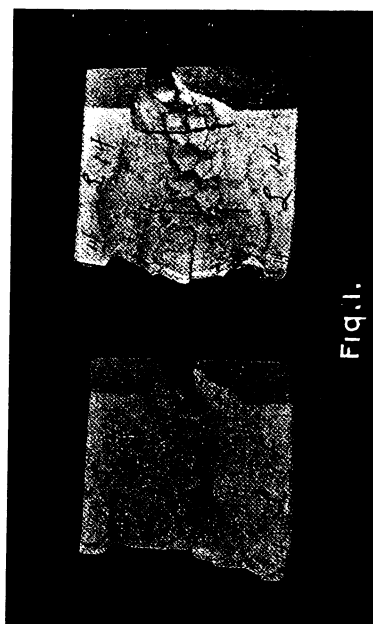


Fig. 1.

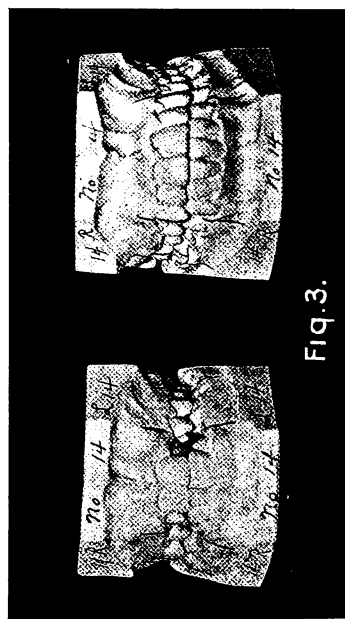


Fig. 3.



Fig.5.



Fig.6.



Fig.7



Fig.8.

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I have a case of mal-occlusion with me to-day, which I desire to present, in which I believe it was absolutely necessary to move the upper molars distally in order to get the best results, and I think the following pictures will prove to you that it is one of the exceptional cases of which the Doctor speaks.

Case from Practice.

The case belongs to Class II, Division II, and is somewhat unusual, in that it is characterized by a bi-lateral distal occlusion of the lower arch, the upper incisors being in lingual occlusion to the lower incisors, and the patient being a mouth breather with practically normal development of the mandible. (Figs. 1 and 2, models on left side.) The face presented the characteristic appearance of a Class III case, in which the lower arch is in mesial occlusion to the upper arch. (Figs. 5 and 6.) According to my diagnosis the case presented the following forms of mal-occlusion:

First. Bi-lateral distal occlusion of the lower arch.

Second. Imperfect alignment and lingual inclination of the lower incisors.

Third. Lower cuspids erupting in torso occlusion.

Fourth. Contracted and shortened upper arch.

Fifth. Torso-lingual occlusion of the upper incisors. The lateral incisors were almost in contact with the first bicuspid, thus closing the spaces for the permanent cuspids.

Sixth. Torso-occlusion of the upper first bicuspid.

The shortening of the upper arch was most likely due to the premature loss of some of the temporary teeth, allowing the upper molars and bicuspid to move mesially from normal, and the incisors to move lingually.

The treatment consisted in moving the upper molars and bicuspid distally about the width of a bicuspid. Expansion of the upper arch. Labial movement of the upper incisors. Rotation of all the teeth in torso-occlusion. Moving the lower incisors labially to overcome their lingual inclination, and to provide space for their rotation.

The upper molars and bicuspid were moved distally, instead of shifting the occlusion by moving the lower arch mesially, because there was a prominence of the lower jaw, and the facial lines would not permit of any forward movement.

The models on the left of Figs. 1, 2, 3 and 4 show the case in the beginning; those on the right side the completed case. I consider that almost ideal results have been obtained, both in occlusion and facial harmony. I do not believe the face would permit any more prominence of the mouth, making due allowance for the future development and the

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enlargement of the features. Figs. 5, 6, 7 and 8 are pictures before and after treatment. Age of patient, eleven and thirteen years, respectively.

A most important factor in this case was the child's health. Because of the severe mal-occlusion of the teeth thorough mastication was made impossible; therefore the food was not properly prepared for its entrance into the stomach, and as a result indigestion followed, and the patient suffered from mal-nutrition. This, together with the baneful influence following continuous mouth breathing, made the child almost a physical wreck. The family physician had informed the parents that the boy was undoubtedly tubercular, and advised that he be removed from the detrimental influences of this climate to one more suited to his condition. They were arranging to go to New Mexico with him when I was first consulted. I am happy to state that after two years' treatment in the way of orthodontia and an operation for the removal of adenoids, thereby establishing normal occlusion and normal breathing, the patient presents a healthy condition, both physically and mentally. All evidence of a tubercular trouble has disappeared.

I feel some embarrassment in being called upon
Dr. C. A. Hawley, to discuss such a paper as this, containing as it does
Columbus, Ohio. propositions that have undoubtedly been the result of long study and careful observation. It is a paper which seems unworthy of anything but the most thoughtful consideration, and what I have to say must be mainly in the way of expressing my appreciation and admiration for the comprehensive and scientific treatment of the subject. Concerning classification and diagnosis, Dr. Angle, in this paper, has not at all overestimated its value and importance, and it is due to his work that we have any good working classification at all. The position that the writer takes, that the first molar invariably comes into the proper position, if established, strengthens very materially his claims in regard to the value of his classification.

The main proposition is one that at first, without more time to consider and observe, I am inclined to doubt. We know that first molars are found moved mesial to their proper position, either on one or both sides. Now whether they are farther forward than they will eventually move in the full development of the denture, I am not prepared to say, and I do not believe one could offer an opinion without considerable observation made with relation to that especial point.

In view of the fact that the cuspid teeth, though often apparently out of place, will generally be found to have forced other teeth out of the way to take their normal position, it seems reasonable to think that the first molars coming in more unhampered by obstacles in the way would

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invariably take the proper place. That proper place must be judged with the particular race and type of individual in full consideration. We have a great deal to learn about faces. You cannot make faces conform to a fixed standard, and you cannot make many faces beautiful, but probably we can assist greatly to perfect the type which Nature intended for a particular individual. In the different races Nature has certainly placed the first molar in the proper place to develop the race type. I would not want to say that she is not as wise in regard to the individual.

This is a paper to think over and study. Its conclusions were not arrived at hastily, but are evidently the result of much observation. I believe in the main they are true, and a few exceptions would not alter the chief argument of the paper.

The position of the upper first molar is a subject which interests me vitally. I am not yet convinced of the accuracy of Dr. Angle's deductions as he has presented them to us to-day, but if I am wrong, and it can be made clear to me, I shall be only too glad to change my views. It would simplify matters immensely for us if we knew that the upper first molars always erupted in correct mesio-distal relation to the face, for we would then know, beyond question, the exact requirements of the case; as the matter now stands men sometimes differ on this point.

If it could be proven that this particular tooth is always in correct mesio-distal relation to the skull, the fact would still remain that the development of the face is so influenced by pronounced cases of mal-occlusion, even of Class I, that unless the correction is undertaken at a comparatively early age we will never be able to develop the face to the extent that it would have developed naturally if unhampered by the conditions causing the mal-occlusion. It is at this very point that the advocates of extraction make their most serious mistake. They are afraid of marring the facial line by making the lips too prominent, so they remove one or more teeth and thus lose, to their patients, the many advantages of an increased nasal capacity, which would have resulted from the enlargement of the jaws and the retention of all the teeth. If there is really danger of the lips being too prominent, move the molars distally.

In the correction of cases of the first division of Class II, I take it that Dr. Angle would *confine* the movement in the molar and bicuspid region entirely to the lower teeth; for if the upper molars erupt in their normal mesio-distal relation to the face, that would be the natural treatment. Now, I have at times treated cases of the first division of Class II where I would not have dared to resort to such practice.

It is especially difficult for me to believe that we should base our treatment of all cases of Class III upon the reliability of the position of the upper first molars. I believe that it would be infinitely wiser for us to make a careful study of the artistic requirements of these patients, and then as a result of this study decide whether we will establish occlusion by confining the movement, as nearly as possible, to teeth of one arch, or whether we will endeavor to bring about a reciprocal movement, which shall be controlled according to the requirement of the case.

Dr. Angle himself does not question the fact that the upper first molars erupt lingually to the normal line of occlusion; yet he would have us believe that even the premature loss of a second deciduous molar would not allow this tooth to come forward of its normal position, but that the teeth in front of it would simply fail to be pushed forward sufficiently. He has taken great pains to convince us of the truth of his convictions, but it happens to be one of those questions that cannot be absolutely proven. It is perhaps quite as difficult to disprove, though we all admit the fact that these upper first molars are frequently out of position bucco-lingually together with the fact that I have seen a first molar almost in contact with a cuspid, and its relation to the lower teeth and to the profile showed conclusively that in this case, at any rate, the molar had moved forward too far. This is certainly strong evidence.* I have seen fully developed cases of both the second and third classes when only the deciduous teeth were present, and surely in such cases as these we could not expect to find the first upper molars erupting exactly in their correct mesio-distal relation to the skull and face.

If Dr. Angle could sustain his contentions regarding the reliability of these teeth it would indeed be a marvelous discovery, for nowhere else in all nature, so far as we know, is there an organ which is always normal in any single phase of its functions or anatomy. Seriously, gentlemen, it hardly seems within the realm of reason to expect so much of these teeth. I am thoroughly in accord with Dr. Angle's earlier views, which were, in effect, that the upper first molar and cuspid are the most reliable of any of the teeth in the mouth, but farther than that we cannot go, I think.

I have examined carefully the model belonging to Dr. Lourie, which Dr. Angle showed on the screen, and in this particular case he is possibly right. My own unbiased opinion was that the upper molar, particularly on the one side, had tipped forward at a slight angle.

I have for several years been greatly interested in the relation of malocclusion to the development of the face, both externally and internally,

* Dr. F. A. Bogue shows a model on page 767 International Dental Journal 1905, where even a second upper molar is almost in contact with the cuspid.

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and I am becoming more and more convinced that the bone proper of both the maxilla and mandible is influenced by pronounced mal-occlusion. It is but natural to suppose that Nature provides a base, or foundation, in proportion to the growing superstructures, and, consequently, the large well-developed dental arch, which has become such unaided, is associated with a face and jaws in every way more completely developed. The point I am working toward is this: the cases where deciduous molars, for instance, are lost early, and where the upper first molar moves forward without causing the forward movement of the teeth in front of it, is a type of case in which the internal face is not well developed. Therefore, if correction is attempted after about sixteen years of age we must remember that we are developing the dental arch to its normal degree, while the structures beyond and even those influenced by the roots of the teeth will not take on a normal development after about that age.

I have listened to this paper with a good deal of pleasure, and I can agree with a good many things in it. The talk on harmony has been delightful, and I think it is right, but some of the things have struck me as not being quite the sort of matter we want to send out as representing our society.

In the first place, take the use of the terms, "old school" and "new school." It is like putting a chip on your shoulder and expecting somebody to come around and knock it off, looking for a fight. Let us follow the idea of the word "occlusion." If we wish to have the word "occlusion" mean what is normal, let us use that word occlusion, and not the words "normal occlusion." Let us go a little further and follow that same idea out. If we are going to correct teeth by putting them in occlusion, if we are going to believe what has been quoted in this program, "occlusion is the basis of the science of orthodontia," let us be orthodontists; let us be what the term orthodontia means. Let us speak of ourselves as orthodontists, and not as of the "new school." If you want to speak of a man who does not put teeth in the proper relation, call him a "regulator" or a "dentist"; he is not an orthodontist. Let us not antagonize others by saying we are of the new school and know so much better than others.

I would like to ask Dr. Angle a question. Does he mean to say that in cases where the upper first molars move forward mesially they are inclined, or that they move forward? From the cast shown on the screen I should say that that tooth is inclined forward, that the tips of the roots are in their right relations. Now don't misunderstand me to mean that I think that just tilting that tooth backward and bringing the

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lower jaw forward will correct this trouble, because I don't. I think, with Dr. Angle, that the first upper permanent molar is close enough in a standard relation so that you can judge by it. I would say that I believe that the first upper molar is nearer correct than the lower, and I believe that is as far as you can go.

I do not believe that we have any arbitrary standard. The man who chases an arbitrary standard is chasing a will-o'-the-wisp. It is so all through everything in this universe. It is like the absolute zero—it is a point upon which to base calculations, but for practical use we have zero, and we make our calculations accordingly.

Now, as to the temporary teeth, I believe it is largely a question of environment, and I believe hereditary influences will have, as you may say, a good deal to do with it. I have one family under treatment—three girls. All three of them showed great irregularity in the temporary teeth. I have watched those cases and watched them develop in the temporary teeth, as Dr. Hawley suggested, but they seemed to grow worse. I find that I can diagnose a Class II and Class III case in the temporary teeth every time. Now, this may mean only for the Lake regions. I believe the men who are in the Lake regions meet a harder type of cases than are found elsewhere. Nearly everybody has them. I find the children who are presented to me with their temporary teeth frequently have those teeth in mal-occlusion, so that I cannot agree with Dr. Angle on that. And I wish again to go on record as saying that I believe that the upper molar cannot be taken as a standard. It is very close to it perhaps in many cases. We very often have tried to move it forward too far, but I believe you get the indication when to stop by the resistance that you meet.

It has given me great pleasure to listen to this masterly presentation of the claims of the first permanent molar for recognition as the greatest and most unvariable tooth in the permanent denture. It is inconceivable that any fair-minded, scientific orthodontist could dispute its paramount value as a basis of diagnosis. There are those who have criticised us for using a negro skull to show normal occlusion. I think that their criticism must be due to a misunderstanding of our position, which is that this particular skull shows a beautiful occlusion, with the teeth and the alveolar process in the best positions to give facial harmony in this face and in this type, but not for all people, nor even for all negro faces, because, as we who observe faces carefully know, we sometimes see the face of a negro as straight as any of the Caucasian race. Last year I noticed the same thing in some faces among the Moros and among

Dr. H. B. Ketcham,
Denver, Col.

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the Indians at the World's Fair. Their profiles were as straight as any of ours, their types demanding this.

But we of the new school know, and those of the old school will yet learn, that no matter how far forward the teeth and the alveolar process may be placed upon the maxillary bones, and no matter how far back they may be placed, all the teeth must be present and in occlusion to secure Nature's intended best harmony in the features of that particular type.

Had some of our critics understood the importance of the first permanent molar in diagnosis we would not have had the lamentable results which were shown in the Second District Society in Brooklyn, and which were reported in the August (1905) ITEMS OF INTEREST from Dr. Guilford's paper; and others equally bad, reported in the July (1905) ITEMS OF INTEREST, from Dr. Case's paper. Dr. Guilford is evidently not familiar with the normal occlusal positions of the first molar, and in several of his slides which showed the occlusion he did not call attention to the fact that the lower arches were in distal occlusion, and said that "expanding the upper would make it too large for the lower," which, of course, would be true if accomplished without moving the lower forward.

Dr. Angle spoke of a photograph of a patient which I have. After talking with Dr. Angle last evening it occurred to me that I had a photograph of a case similar to the one which he showed of the palatal aspect of the upper arch. This was a case with the second bicuspid in lingual position, which was later extracted by the dentist. I have seen the original models with the teeth in occlusion, and later I made models from plaster impressions, and, as you will see, the upper molar is in its proper mesio-distal relation to the lower; the teeth on the opposite side of the mouth are also in proper mesio-distal relations, but the teeth anterior to the missing upper second bicuspid have not been pushed forward by the molar, and are in distal positions, so that the face, to the casual observer, has the appearance of a Class III case. The second temporary molar must have been lost prematurely.

If I understand Dr. Angle correctly, the first permanent molar erupted in normal position and relation with its opposing first molar, but on account of the loss of the second temporary molar the first upper permanent molar, being deprived of mesial resistance, moved prematurely forward into its ultimate correct position, but, of course, without exercising Nature's usual normal force (on account of the loss of the second temporary molar) in pushing the remaining deciduous teeth forward, and thus normally stretching or lengthening that lateral half of the upper jaw, and so providing the normal space for the eruption of the bicuspid

when they should later attempt to erupt. In other words, the first permanent molar having prematurely taken its correct position without assisting in lengthening the jaw, those permanent teeth anterior to it were, without proper space, forced to be bunched in their eruption, the second bicuspid being forced to take a lingual position to the line of occlusion, which seems to me the only thing that could result under such conditions. I therefore see no reason for taking any exception to the position Dr. Angle has taken, and those who oppose him must certainly fail to comprehend the normal forces in the building of the dental apparatus and how they would naturally be modified when deprived of the normal wedging influence by the loss of one or more of the deciduous teeth prematurely. My own case proves this exactly, and I have no doubt that every one of you have seen or will see similar cases if you will only interpret them correctly.

I feel I must express my appreciation of this
Dr. William J. Brady, painstaking paper from Dr. Angle, and say that
Iowa City, Iowa. although for the past year we have been too busy
to write to each other, yet there must have been
some vein of communication between St. Louis and Iowa City just the
same, for I have been doing some independent work along this same line,
and have been led to exactly the same conclusions, although our work
has been very different, mine being investigations in comparative anatomy
upon the skulls of the lower animals as well as man.

It would seem that the matter presented by Dr. Angle must have
been running in the minds of us all, for even in the criticisms offered we
see that men have been thinking on this subject. Unless a man thinks
he cannot express a definite opinion about anything, and whether he
thinks right or wrong is not so important as the fact that he thinks at all;
he will think right in time if he only keeps up his thinking. So for the
benefit of those who have been thinking—and let us hope will continue
thinking—I will give a few results of my investigations.

First, there is no absolutely fixed point from which the development
of the cranium can be gauged, either in the animal man or any other.
The nearest to a fixed point is the anterior margin of the foramen magnum,
the place used by zoologists generally as the starting point for all cranial
measures and comparisons.

Second, the next nearest fixed point is the placement of the principal
grinding tooth of the superior maxillary. This is a premolar in some
animals and a molar in others; it is the first molar in the case of man.
Examination shows that the relation of this tooth to the rest of the
cranium is very constant throughout all the animals of a certain species



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or type, the relation, of course, varying with each type, but remaining practically constant for all animals of a kind. This fact applies to man the same as the rest.

This is a fact of great importance to us as orthodontists, for it is the only constant point that we can examine at all. We cannot kill our patients just to find out where the anterior margin of the foramen magnum is, hence we must take the next best thing within our reach.

The question next naturally arises, what places this important tooth—or any other teeth, for that matter—in any certain position, and why should this one be so unvarying in place? I believe the answer has never been given before, or, if so, has never been made as prominent as it should.

The time of development of the different teeth should be recalled, when it is seen that the more important the tooth the earlier its development begins. I can speak with certainty in the case of but very few of the lower animals, but in the case of man more or less of the crowns of the temporary teeth and of the permanent first molar are developed and placed in their positions before birth, without the action of ordinary outside influences. Their development is governed entirely by the action of heredity, whose influence placed those same teeth in the same positions for countless generations before us, and will continue to place them exactly the same for countless generations after us. The nearer we reach the beginning of anything, whether tissue, organ, or what not, the more is it governed by the action of heredity and the more it is exactly alike in development in all specimens.

The action of heredity is the chief if not the only controlling force that settles the positions of the teeth named, and they are so placed that when they erupt they have only to emerge through the tissues covering them when they are in their correct places. This is why the temporary teeth are always practically regular, which fact is one of the best established in relation to the teeth. The gentlemen who have told of finding from fifteen to twenty per cent. of mal-occlusion in these teeth have been carried away by their enthusiasm, and while I have no doubt they think they are right, yet they are mistaken. An estimate of mal-occlusion cannot safely be given from a limited number of cases; they must be examined by the thousands to form any just conclusion, and when these gentlemen have done this they will revise their figures and put the percentage very small, as it should be.

The first molar is the only tooth of the permanent set to be developed and settled in position before birth, and its relationship to the rest of the teeth and to the cranium is remarkably constant, undoubtedly from the action of heredity, as has been explained. All the others are developed

later in life and subject more to the influence of health, disease, nutrition, exercise and growth and development in general. The first molar is erupted early, while development is usually very active, and from all these causes has the best chance of any of the permanent teeth to find a correct placement. If abnormality of location occurs—as it does at times—the reason therefor is usually so plain as to admit of exact calculation of the correct position of the tooth, and this point Dr. Angle especially emphasized, but it has been overlooked or misinterpreted in the discussion.

It is on this very point that Dr. Angle has been subjected to the most criticism, all of which has come from a misunderstanding of his meaning, though I must say that it looks as though some of his critics have not tried very hard to understand him. He has never at any time taught that the first molars are invariably found in the proper place, but has maintained that Nature is very constant in correctly placing them, and that any malposition thereof can almost always be accounted for by some simple cause, and the correct position calculated, and this teaching is certainly correct.

There should be no difference of opinion in this matter, or at least it should not take the form of criticism of the paper from a misunderstanding or misinterpretation of its statements. Such proceedings are unscientific, the thing we especially wish to avoid. There should be no question between any of us at all over this, for I think we practically all believe the same thing, and we have lost sight of the main question, and are discussing mere differences of expression.

The differences of opinion lead me to feel that we are not yet familiar enough with the development of face, jaws and teeth. We cannot fully understand the presence of the abnormal till we comprehend the origin of the normal. We cannot master such problems as this one till we have traced the development of every bone of the cranium from its beginning to its completion, when we can see what Nature intends to perform and can understand what really occurs when it fails to reach the intended end. We will be at sea on many things till such study has been made.

I wish finally to say to Dr. Angle that though the years are passing he is not growing old. When he begins to really grow old, his faculties will commence to decline, but this paper shows that as yet they are on the increase, and that age has not left its imprint upon him, and may the time be long in coming when it does.

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Dr. J. Lowe Young,
New York. I am very much interested in the subject to which we have been listening, and I must say, very, very much surprised.

I believe there is a vast difference between guessing and judgment. I believe that a man who uses the best judgment he possesses based on experience is entirely different from the man who has absolutely no conception of the subject which he is trying to handle, and simply blunders here and there—and once in a while any fool strikes something correctly. That man, I say, is guessing.

Dr. Angle. Define the difference. What is judgment and what is guessing?

Dr. Young. Judgment is that mental attribute which enables us to arrive at conclusions after weighing evidence or reviewing experiences.

Guessing is an attempt to attain the results of judgment without weighing evidence or reviewing experiences.

If I understand the writer, he makes this assertion: that the upper first molar invariably takes its normal position in relation to the rest of the skull on eruption. I want to go on record as saying that I do not believe that one is ever so developed. Now gentlemen, do not misunderstand me. I refer not only to the mesio-distal position of this molar, but also to its bucco-lingual position.

Dr. Angle takes it for granted that the deciduous teeth are usually in occlusion, but this I cannot accept. What are the principal causes of mal-occlusion? I think there are two great causes: First, I will put lack of use; second, pathological conditions in the nasal cavity and the upper respiratory tract. Do we not have lack of use in the deciduous teeth? We certainly do.

I further believe that fifty per cent. of all second class cases have their beginning prior to the eruption of the first permanent molars, and that the earlier such cases are treated, the better will be the final results.

The picture of the little Indian baby that was shown on the screen, such a beautiful chubby faced little thing, had no signs of lack of development. I promise you that this child from the time he could hold his hand to his mouth was chewing some tough old substance that the old squaw gave him, and was developing muscles to masticate and bone to sustain his teeth, while our city, milk-sop babies got nothing of the kind. Consequently there is lack of development from lack of use.

If this lack of development is very pronounced and is allowed to continue till the age of fifteen, it is very questionable that facial harmony can ever be restored by the most skilful treatment of the teeth. As an

example, take twins: they are so much alike that nobody can tell them apart but the mother, and one of them is shut up in a little apartment here in Chicago, breathing this smoky air, and the other goes to live with her grandmother in Colorado, breathing clear, fresh mountain air and getting pure, fresh milk to drink. The one has a puny, pinched-up physiognomy and the whole organism is dwarfed owing to the environment. The little sister that the father could not tell from the other when they separated in Chicago fourteen years ago, has developed into a strong, healthy child with almost normal occlusion. Do you mean to tell me that by expanding the arches of this undeveloped Chicago girl so as to put all the teeth, which have the same mesio-distal diameters as those of her twin sister in normal occlusion, or in occlusion, I will accept the term, that we will not have a bulging out of the cheeks owing to the positions of these teeth? The earlier such correction is made, the greater chance there is for the rest of the bones of the face and head to develop. But will that develop the whole anatomy? I say it will not.

Now, I would like the slide of the set of models that Dr. Angle threw on the screen, if you can find it, the models of Dr. Lourie's case. (Fig. 14 in Dr. Angle's paper.) Dr. Angle said that this apparent movement mesially of the first permanent molar was not a genuine mesial movement, and that the locking of these cusps had crowded the lower jaw back. Now, gentlemen—

Dr. Angle. I beg to differ with you. I never said that the first permanent molar had not moved forward.

Dr. Young. I wrote it down just as you said it, my dear man, right after you.

Dr. Angle. The models show conclusively that the upper molar had moved forward.

Dr. Young. Yes, but you said that the lower arch was crowded back—not arch, but jaw, that is what you said.

Dr. Angle. I have not the least idea but that it is crowded back some, but how much, I do not know.

Dr. Young. That is all right; if you claim it is crowded back at all, that is all I want.

I have examined these models carefully, and there is absolutely no space between the deciduous molar and the first permanent molar. Now, then, if that whole jaw is crowded back, where is it being crowded to? The condyle of the mandible, I claim, can be crowded back only as much as you can absorb the cartilage in that cavity, and I believe that has not been done in a case like this. I cannot accept

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the statement. Furthermore, I find that in this set of models you did not have occlusion on the other side, but it was an end to end antagonism, and while the lower arch needs bringing forward, that is, the lower teeth need bringing forward some, the upper first molar on this side should be carried back. If this statement that Dr. Angle has made is true, I will never again try to treat a third class case.

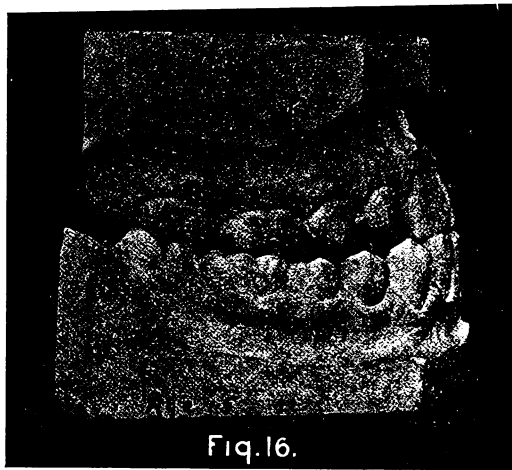
I realize that you have all been pretty well inoculated with my humble effort, so probably we may better close it. I regret, however, that the paper has not been discussed broadly. It seems the points I wished to impress you with most, namely, the constant normal position of the upper first permanent molar, according to type, a few of you have failed to comprehend, and have gone rampant on a minor point which really is an afterthought in the paper, and that, too, without understanding it. Such discussions would be well in the usual dental society, but they are not in keeping with the aims, objects and character of this society. In my opinion men have no right to discuss a paper without first comprehending it, otherwise such discussions can only fall far short of possibilities in intended good.

You are still being taught by the few remaining relics of the old school that the first molars are quite as likely to be too far mesially or distally as they are to be normal; hence we must depend for diagnosis on judgment of the facial lines, and it is hard to get erroneous ideas that we have grown up with out of our systems. This is clearly proven by some of your discussions. I have tried to prove to you what I have thoroughly proven to myself after a large observation—that the first permanent upper molars are wonderfully constant as to normal location; that they are practically never inherited in positions mesial to normal and only assume that position as a result of mutilation, especially of the permanent teeth anterior to them, and that even then their mesial variation will be found far less than any of you will perhaps believe until you have yourselves examined a large number of mutilated cases, and you will also find that any variation can be easily detected. Of course I do not refer to those cases we frequently meet where the first molars have been dragged forward by faulty methods of regulating, usually following mutilation, but even in those cases the molars when released from mechanical restraint of the regulating appliances will show a wonderful tendency to find their normal positions.

Those who listened carefully to my paper know that I intended to lay down no inflexible rule, but only one which is, I believe, the nearest to an inflexible rule that we have as a basis to reason from in the diagnosis of cases of mal-occlusion.

ORTHODONTIA

We have frequently heard in this discussion, "I do not believe" this, and "I do not believe" that. This seems out of place in the arguments of men who are seeking truth. In reality it matters not whether you do believe or do not believe. It is only what can be proven that can or should have any weight among scientific men. Now, if you will bring good and valid proofs for the grounds of your disbeliefs to our next meeting, if it is better evidence than I have offered or am able to offer in substantiation of my position, I will gladly acknowledge that I am wrong and that you are right in our respective deductions. Naturally I am not surprised that some of you should differ with me in my deduc-



tions on some points, but if these differences will only stimulate you to observe carefully and repeatedly along the line I have brought out, I feel quite sure you will not differ so radically with me a few years hence.

There have been some quite remarkable statements made. For example, you have all heard Dr. Young say that he did not believe the upper first molar ever erupted into normal position. Such statements, of course, need no answer. They are only the product of inexperience and lack of observation. He will talk differently when he is not so very new in orthodontia.

Statements have also been made in regard to the deciduous teeth which I think are contrary to the general belief, namely, that a large percentage of deciduous teeth, twenty-five per cent., I think some one said, erupt in mal-occlusion. My own observation leads me to believe the percentage is far less, but any mere statement one way or the other is entirely worthless without the recorded facts derived from observation

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of a large number of cases before we could have anything like a correct basis for an opinion.

In regard to the remarks of Dr. Barnes, very little need be said when we remember his education in orthodontia. He came from the old school, is of the old school, and naturally winces when we are compelled to speak of those who still preach antiquated doctrines as the "old school."

Dr. Watson has told us of a case where the first molar was in contact with the cuspid. I have no doubt that in such a remarkable and rare case the first upper molar has moved mesially from its normal position somewhat—probably as the result of bad orthodontia. Fig. 16 shows one of that class of cases from my own collection, and, I think, a very pronounced type. I could show you several of the same kind, though less pronounced, and yet in this case, when carefully studied, it will be found that in reality the upper first molar is probably but very slightly mesial to its normal position, and this notwithstanding the fact that far less than the usual normal resistance has been given by Nature to prevent its moving forward, for in this case the germs of both upper premolars on this side are missing. Only the permanent cuspid developed, while the deciduous cuspid is only held by the gum, the root being almost wholly absorbed.

On superficial observation you would naturally be led to believe that the fault is in the molar region, while in reality it is anterior to the molar region, the alveolar process and jaw in the premolar region having failed to develop properly because there was no stimulus from the teeth to promote their development.

Dr. Watson has also said that in the treatment of cases belonging to the first division of Class II that if the upper molars are in correct position mesio-distally, then the simple "jumping of the bite," according to Kingsley, would be the correct plan of treatment, but that he has treated scores of cases where to follow this plan of treatment would be out of the question, as it would make the lower part of the face too prominent. Now this may be true, although that is a large number of cases, and if the Doctor will show us at our next meeting good models and good photographs to prove his statement, even in a half dozen cases, I will be much surprised. I will say that in my life's work I truly cannot recall a single case belonging to this division of this class, unaccompanied by mutilation, where the first upper molars were mesial to their normal positions. Now one very strong proof of the correctness of this is that in these cases all your common observation, as well as all the pictures representing these cases, show that the lower jaw is shorter than normal—an undeveloped mandible—giving the well-known weak and receding chin which the

caricaturist so often utilizes, and if Dr. Watson has had scores of cases with normal sized mandible, yet with teeth in distal occlusion, he must have a class of patients differing greatly from those of the rest of us.

Now why would we move the upper molars distally if they are in their normal positions in these cases? Simply to do the best we can to strike a balance between the normal in the upper jaw and the abnormal in the lower. If it were practicable to "jump the bite" instead of the occlusion only, we would in every case of this kind that I have ever seen come the nearest to the ideal in establishing facial requirements, but we now know, at least some of us think we do, that what really does take place when we "jump the bite" and maintain the normal locking of the cusps long enough for this occlusion to become permanent, is that in reality the mandible gradually slides back to its original or approximately original position and relation with the skull, the crowns of the upper teeth having been tipped more or less distally, while those of the lower jaw have been tipped mesially, so that in reality we have accomplished, after many months of difficult retention, merely the jumping of the occlusion, or what we now aim to accomplish and do accomplish easily in a few weeks by means of the Baker anchorage. Yet this is not the ideal, but is the best we can probably do; hence the importance of jumping the occlusion as early as possible, hoping and believing that the normal relations of the teeth will stimulate and tend toward the normal growth of the mandible, and this principle and result will hold good quite as well in the third class as in the second.

Here is a statement which may surprise you. I have yet to see one of these cases where we did move the upper molars distally, together with the teeth anterior to them, that it did not show proportionately detrimentally in the contour of the upper lip, yet the compromise, as I have said, with the lower is perhaps the best we can ever do.

Now whether the deciduous teeth are locked in mesial or distal occlusion in one case or in many cases in a thousand it matters little in the question under discussion. If the development of the jaws and the deciduous teeth is normal, the latter will be in normal occlusion, and will make possible the normal eruption and locking of the first permanent molars, as I have shown you. But if they are locked abnormally, or in mesial or distal occlusion, through adenoids or from any other cause (and the wonder is, considering how commonly and how early in childhood adenoids attack the post-nasal tract, that we do not find more cases of mal-occlusion of the deciduous teeth), it only means that this is not the rule, that it is abnormal, and that it will probably make impossible the normal locking of the permanent first molars unless the cusps of the deciduous teeth should be worn so smooth from abrasion that the first

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permanent molars might, and doubtless do in many cases, succeed in groping their way into normal locking. The safe rule would be, I think, to correct the mal-positions of the deciduous teeth as a greater safeguard for the normal locking of the first permanent molars, as has been so beautifully and effectually done in one of these cases by Dr. Mendell. The case is to be later shown upon the screen at this meeting—the youngest case so far treated.

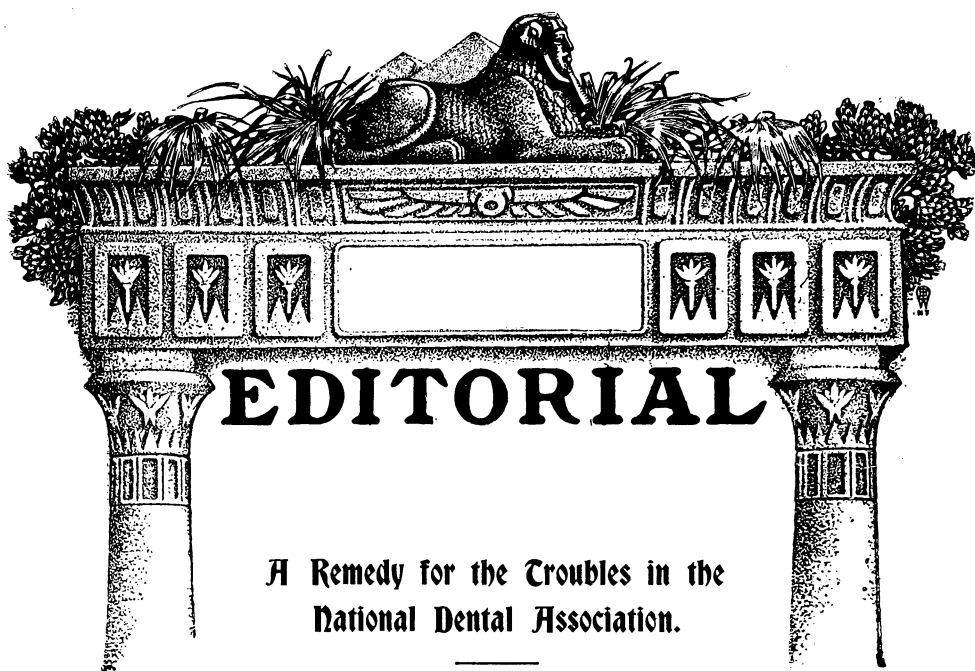
Dr. Watson has further said that we often find the first upper molar in lingual or buccal occlusion, and since this is so, why should we not with equal reason expect to find it mesial or distal to its normal position? To my mind there is no parallel between the conditions. In the first instance these teeth are actually forced buccally or lingually by the irresistible force of the jaws acting through the inclined occlusal planes, but I would like to ask what force there is to move the upper molars forward other than that of the normal force of the erupting second and third molars, and after they have so acted and succeeded in locating the first molars what could possibly cause their further migration? I can readily understand how they would be prevented from moving forward through the force of the lips acting on them indirectly through the anterior teeth, but I know of no power operative in moving them forward.

I am very much obliged for the kindly remarks relative to my paper and especially am I gratified with the masterly discussion of Dr. Brady. That is the kind of reasoning I like to hear. He has carried you deeper into the subject than I have attempted, and the deeper we go the more convincing the evidence in favor of the constancy of the position of the first molar according to type.

So positive am I of the correctness of the position I have taken to-day that I feel sure it will only be a little while until we hear some of our critics make their usual well-known statement, "Why, certainly; we have always believed that and have been teaching it all over the country for years."

I sincerely hope and believe that the discussion will have so stirred us all up that in the end we will be much benefited, and the majesty and importance of the upper first permanent molar be better appreciated.

Let me again say in closing, bring proof—plenty of it—in the form of good models and good pictures, to our next meeting. In this way much good will result from this discussion. I have no fear but that the mechanical in orthodontia will take care of itself, for most men seem unable to go beyond the mere mechanical, but I do have fears that many of you are not giving as much thought to the purely scientific phases of orthodontia as you should, and it is the problems of science relating to our specialty that these meetings should earnestly strive to investigate.



The Editor of *ITEMS OF INTEREST* was recently criticised by a gentleman for whom he has high esteem, as "a man who finds fault but offers no remedy." The Editor might call to mind one or two "remedies" proposed in these pages which have proven efficacious, but that would be retrospective. The question of the hour is the dissatisfaction in the National Dental Association as at present constituted, and the remedy therefor is the remedy sought.

**The Present
Difficulty Analysed.**

Before any disease can be scientifically treated it must be fully comprehended. Let us attempt a diagnosis of the ailment which threatens to disrupt the National; the word disrupt is used advisedly. It is easy enough to scream "politics!" but if you ask a dentist, "Who are the politicians?" he replies: "Why, you are one of them!" Then both men deny the allegation. Since the word proves offensive, though really it is a quite proper word for proper men, let us omit it from the present discussion. It should be the loyal duty of every member of the National to strive to heal the breach if possible.

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Let us then say that there are two prominent classes of men engaged in what we term "society work." These be the executive men; and the writers and clinicians, or scientific men. This classification is not an arbitrary one, because many men belong to both classes; a few even are conspicuous workers in both.

Nevertheless we may, for the purposes of this argument, distinguish between the executive men, those that organize the programme; and the scientists, those that contribute the programme. No society can be made successful, or useful, without the existence and co-operation of both. These facts are so elemental that they will not be disputed. Let us now consider their practical application.

Local Society Work. A local society is a body of dentists in a large city, or in an area including several smaller cities, associated together for mutual benefit. But as such men are neighbors, an essayist or a clinician from their own membership is less able to instruct, than one from a distance. Thus it is the constant aim of capable executives of local societies to obtain programme material from distant points. Consequently the scientific element in the local society places that body so little under obligation, that it has scarcely any claim upon the offices, which naturally are given to the executives, towards whom the members do feel indebted. This is both praiseworthy and proper. Nevertheless, the situation should never be abused. In a body of professional men, no man, however much he may have placed the society in his debt, should ever become an office-seeker. When he does, he makes of himself a politician, in the offensive sense.

State Society Work. There is a little difference when we come to consider State Societies, though at best the principle is much the same, because a State Society is only a local society in a larger locality. True, because of this increased area, there is an increased chance to fill the programme from the membership list. Practically, however, all executives of any experience, know that the success of the annual session will largely depend upon the proportion of men from other states that may appear upon their announcements. Thus again the executive element has the larger claim upon the offices, and usually occupy them.



In the selection of presidents of State Societies two modes of procedure have been successfully carried into effect. Where the state is definitely divided into districts, it is sometimes the rule to choose presidents from the various sections in rotation, but even then the man chosen is commonly one who has served in a lesser position. The presidency is his final reward for his executive work. In an undistricted state, in a certain well managed State Society, the new member is offered a place on some minor committee as soon as he is elected. If he accepts and becomes a worker, he is promoted year by year in accordance with his ability and willingness. Finally he reaches the Clinic Committee, and then is in "in line" for the presidency. After the Clinic Committee he reaches the Executive Committee, then the Vice-presidency, and then the Presidency. There has not been a contest over offices in that Society in twenty years. It is a smooth running effective machine, but there are no "politicians," because every man has an exactly even chance.

**National
Association Work.**

But when we reach the National Dental Association, the principle changes, and it is this fact that has not been recognized; it is because the National is and always has been managed just as a local or a state organization would be, that all the hue and cry against politicians has arisen. There are minor wrongs in the National's constitution, but these need not be considered just now. The major wrong is that the presidency is practically within the gift of the executive element, and that it has usually been allotted to one of themselves. This does not accuse the executive men of wrong doing, because their work and their rewards in local and state bodies have led them into the error of adopting as the motto on their escutcheon, "To the victor belongs the spoils." Possibly this will be, so long as they will it to be. But so long as they do the National will never be what it might be; what it ought to be.

Have not the executive men benefited enough by the work of the scientific men in local and state societies, to stand ready to offer those that helped them to position and place, some meed of recognition in the National?

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In the National, unlike the local or the State Society, there is no region beyond, from which to recoup the programme. Essays and clinics must come from the scientific element within the society. Shall this element, those students and writers who have traveled to help the local societies, traveled to aid state societies, finally travel to and from the National without recognition?

Often things are best seen in their truest light when viewed from a distance. Let us suppose a man in Europe, hearing for the first time of the National Dental Association of the United States. He notes the name of its president, and recalling that America is said to be the creator of the profession of dentistry, would it surprise you if he thought that the president of the National Dental Association must be the greatest dentist in America? Would it be true?

Why should it not be true? If the presidency is the apple of discord, which makes politicians of our executives, why not remove the presidency beyond the grasp of a mere executive man? We have admitted that a man may be both executive and scientific, thus we suggest no barrier against any member. But why not make the presidency of the National Dental Association the final reward and honor for high scientific attainment? If perchance such a student should prove a poor presiding officer, he would have three vice-presidents who might preside for him, and these could all come from the executive ranks. But it is the presidency, apparently, that makes men avaricious for office; then let us hang this apple on a higher tree.

How may this be done? Very simply. Let the president be elected by a two-thirds vote of the entire Association, conducted by mail. Then let the incumbent be president year after year until some other man reaches such esteem among our members that two-thirds of us would name him for the office and the honor, without the suggestion of a folded piece of paper carrying a name, and secretly passed, as commonly seen during the so-called informal ballot. Some will say, "Why, then, a man might be president for years." Well, why not, if no one equally prominent be found? Was not Judge Daly president of the National Geographical Society for over fifteen years?

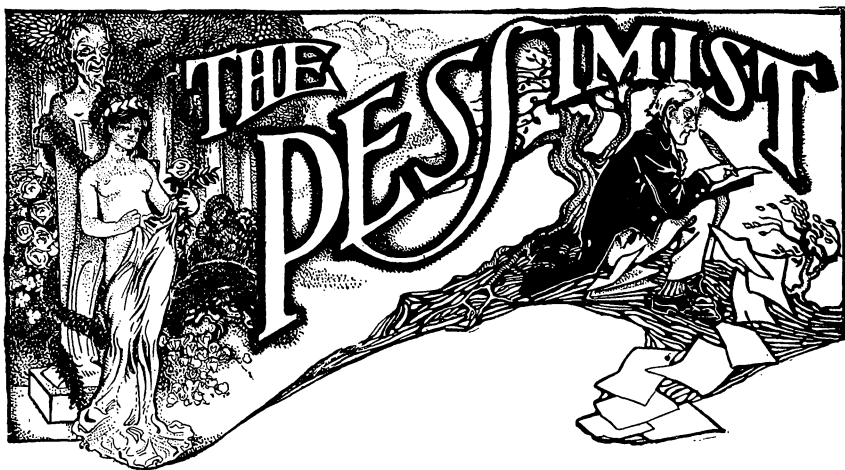


Of course the scheme is Utopian, but it would be effective. The mail ballot, even if a majority be deemed sufficient to elect, completely kills lobbying, and it is lobbying that causes us to whisper "politics."

If this remedy should be considered too radical, there be others less extreme which might be suggested, which have indeed been discussed. But why not try the radical cure at once?

In some cases of dysentery castor oil is the best medicine, yet many men prefer blackberry brandy. But the doctors know that the oil is better than the brandy.





IT'S CURIOUS WHAT a craze some folks have to be known as inventors,
 ✦ and usually the less real invention there is about their schemes the more
 ✦ keen they are for the title, and the more coin they feel entitled to—the
 ✦ coin of other folks, of course. ✦ ✦

✦ ✦ ✦

TAKE EGGS, for example. I suppose the first fellow that figured out to
 ✦ make china eggs, "that look so natural you can fool a hen, and make her
 ✦ set on the substitute," thought himself a biologist at least. Of course,
 ✦ if some fellow would come along now and make a false egg so natural
 ✦ that the hen would not only set on it, but hatch a chicken out of it,
 ✦ I'd take my hat off to him and say: "Mister, you're an inventor, all
 ✦ right, all right." But there are so many dental inventors offering us
 ✦ gold bricks out of which they expect to lay by nest eggs for themselves,
 ✦ that it's all wrong, all wrong. ✦ ✦

✦ ✦ ✦

NOW I HAVE so much respect for the inventive faculty, and we need the
 ✦ real inventors so much, that I shan't offer them any discouraging talk.
 ✦ So go right ahead, you real Inventor Fellows, and invent things. Only
 ✦ be sure the things you invent are things, and not methods. For the
 ✦ New Method Man is the party of the third part, the dentists and the real

ITEMS OF INTEREST

* inventors being the parties of the first and second parts. It's well
* known that in nearly all contracts we have the party of the first part
* and the party of the second part. But beware of a contract with the
* party of the third part. Yet it's curious that the party of the third
* part, in this instance the New Method Man, always wants to sell you—
* a contract. You see he has very little else to offer. * *

* * *

OF THE NEW METHOD MAN there be two breeds. I was about to say
* classes, but there is a rooted prejudice against class distinction in this
* country, and there is no distinction about these fellows anyway. To
* my mind extinction would better fit the requirements. So let it go at
* breeds. One breed includes the Patent Fellows, and the other the
* Inventor Fellows. Sometimes the Inventor Fellow is a Patent Fellow
* also, which makes him a sort of hybrid. Again the Patent Fellow is
* sometimes an Inventor Fellow, but not always. For instance: * *

* * *

A PATENT FELLOW once wrote me something like this: "I have just
* taken a patent on a new and useful method of filling teeth." Now don't
* blame the man for saying "new and useful." That's the regulation
* patent lawyer's lie, and it was only half a lie this time because the
* method was useful, if not new. * *

* * *

IN THE REST of his letter he told about his method. He had noticed that
* cement would hold a gold crown in place, even when the crowns did not
* fit very well. (Have you ever observed in your own business how likely
* the Depot Man is to send you a No. 7 crown when you distinctly wanted
* a No. 6? Exasperating, isn't it?) So one day, or maybe it was in the
* night, he didn't make that clear; anyway at some time or other it sud-
* denly occurred to him that if cement would hold crowns in place when
* they are too large, maybe cement would help some with fillings that
* are too small. So many fillings like that do drop out, often, too, before
* the bill is paid, that just as soon as the idea came to him he extended
* the right hand of fellowship to that Idea, as it were, and murmured:
* "Say, I guess you're the right sort. I can use you in my business." Then
* he tried it, and it worked. And he knew right away it was useful, so
* he got a patent on it. * *

ITEMS OF INTEREST

NOW, KIND READER, or whatever kind of reader you are, maybe you
✦ think a fellow couldn't get a patent on sticking gold fillings to teeth
✦ with cement. If that's how you feel about it, just call up the Patent
✦ Office, Washington, D. C., on your Long Distance, and you'll learn a
✦ thing or two. ✦ ✦

BUT AFTER HE GOT his patent, I guess he got a bill from his lawyer,
✦ and so when the joy of owning the patent had faded a little, and he
✦ came to balance up, he must have discovered that he wasn't getting any
✦ more for fillings pasted in than for the old kind, and I guess he won-
✦ dered what he had made by taking out that patent. And when he failed
✦ to find any way to turn that patent into real money, he wrote to me and
✦ asked if I knew how he could make the thing pan out. And I guess I
✦ was real mean about it. ✦ ✦

I WROTE HIM the name of a book printed ten years before his patent, and
✦ gave him the page number where his "new and useful" method was not
✦ only described, but made very plain with right good pictures. What's
✦ more, I told him the method was old at the time when the man wrote
✦ that book. This was what the classic American writers call "rubbing
✦ it in," but then, he had to find out some day that his patent was only
✦ worth fifty dollars—the fifty that the lawyer took from him. ✦ ✦

THERE ARE QUITE a lot of fellows like that. They practice somewhere
✦ on the edge of civilization, and often they have trouble doing things.
✦ They tackle some tough proposition, and maybe they conquer it, and of
✦ course that's to their credit. But when we give a man credit, he owes
✦ us; we do not owe him. Yet when these fellows find out some little
✦ thing all alone, they rush right down to the depot and take the cars
✦ for the next dental convention. Then they button-hole folks and want
✦ five dollars for the great secret. And the first fellow that forks over
✦ says, "I did that twenty years ago." He says that to low music—dimin-
✦ uendo, I think, is the term. Then the tune changes to crescendo, and he
✦ sings, "I want my money back." That may be ragtime, but he gets his
✦ money back in no time, if he is big enough. Usually he is. ✦ ✦

AFTER THE SCUFFLE the Patent Fellow—he isn't a Patent Fellow just
✦ at the time, but he's going to be—he thinks the Fellow that said he did

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* the trick twenty years ago is a liar. Maybe he is—and then again,
* maybe not. The fellows that practiced twenty years ago had lots of
* good ideas. And very few of them took out patents. So there are a
* lot of things haven't been patented yet—some old, and some new, but
* of the latter class not many—not absolutely, entirely new, I mean.

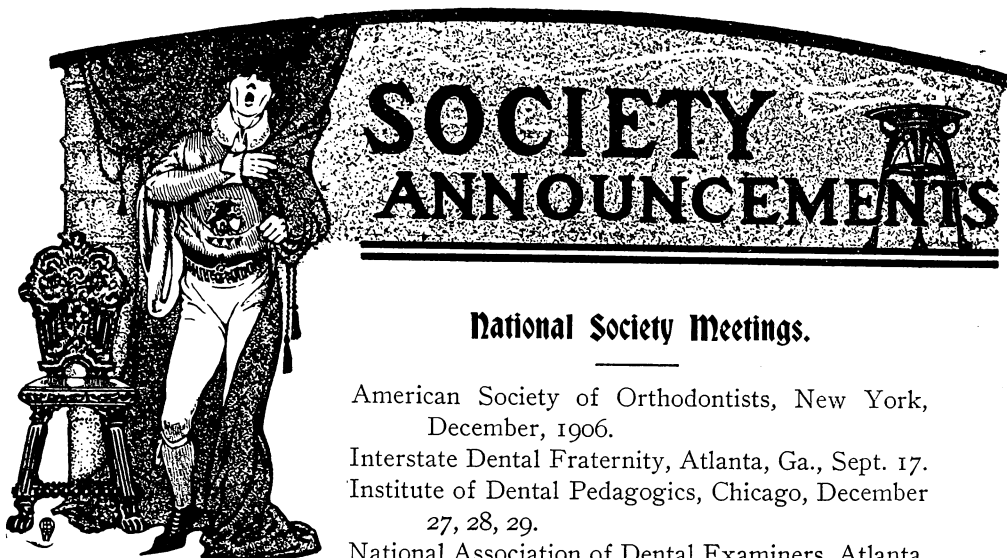


NOW, THERE'S A POINT. It's very human to feel that if you have done

* something that will benefit the World, you ought to benefit by it your-
* self, and that the World, that gets the benefit, should pay you, its
* benefactor. But, oh! how easy it is to forget all the little things the
* World has done for you without sending you a bill, especially those
* fellows in the World who are not in the World because they happen
* to be dead. Next time you start off to Washington to take out a Patent
* on a method (if it's a thing, it's different), while you're riding in the
* cars work it all over again in your mind, and figure out how many steps
* there are in your new process; if you do this, likely enough you'll find
* there are at least ten, and that nine of them are not new at all, but were
* freely bequeathed to you by those Dead Fellows. Then count up how
* little you have paid out in royalties for other men's secrets, that they
* did not keep secret. And query to yourself whether or not you ever
* could have invented your little invention if those Dead Fellows had
* patented everything they thought of? Believe me, my friend, if you
* do all this, you'll never finish your journey. You'll get off those cars
* at the next stop and sell the balance of your ticket; and you'll use the
* money to buy flowers for the graves of those Dead Fellows.

The Pessimist.





National Society Meetings.

American Society of Orthodontists, New York,
December, 1906.

Interstate Dental Fraternity, Atlanta, Ga., Sept. 17.
Institute of Dental Pedagogics, Chicago, December
27, 28, 29.

National Association of Dental Examiners, Atlanta,
Ga., September 14, 15, 17.

National Association of Dental Faculties, Atlanta, Ga., September 14.

National Dental Association, Atlanta, Ga., September 18.

State Society Meetings.

Indiana State Dental Association, West Baden and French Lick Springs,
June 26-28.

Kentucky State Dental Association, Louisville, June 12-14.

Louisiana State Dental Society, New Orleans, June 1-2.

Maine Dental Society, Moosehead Lake, July 17-19.

Massachusetts Dental Society, Boston, June 6-8.

Minnesota State Dental Association, Minneapolis, June 11-13.

Mississippi Dental Association, Gulfport, June 6-8.

Missouri State Dental Association, Springfield, June 5-7.

New Jersey State Dental Society, Asbury Park, July 18-21.

North Carolina Dental Society, High Point, June 20-23.

South Carolina State Dental Association, Charleston, June 26-29.

South Dakota State Dental Society, Vermillion, June 12-14.

Texas State Dental Association, Galveston, June 14-16.



National Dental Association.

The tenth annual session of the National Dental Association will be held in Atlanta, Georgia, commencing Tuesday, September 18, 1906.

The New Kimball House has been selected by the Local Committee of Arrangements as headquarters, where all general sessions of the Association and of the sections will be held. The rates per day at the New Kimball House will be, European plan from \$1.50 to \$4.00; American plan from \$3.00 to \$6.00, governed by choice of rooms.

The usual railroad rate of 1-3 fare for the round trip certificate plan will be arranged for and definite dates and particulars given later by Dr. J. D. Patterson, chairman of the Executive Committee.

The general officers and those of the sections as well as the committee chairman and their members have been working hard to provide an interesting and instructive programme and a large attendance is expected.

Section 1.

Presents the following programme of papers for consideration. "The Present Status of Porcelain Inlays," John Quincy Byram, Indianapolis; "Orthodontia," Richard Summa, St. Louis; "A Phase of Art in Prosthesis," George H. Wilson, Cleveland; "Porcelain," C. N. Thompson, Chicago; "Setting Crowns and Bridges with Gutta-Percha," L. G. Noel, Nashville, Tenn.; "Orthodontia," Victor H. Jackson, New York City; "Orthodontia," Calvin S. Case, Chicago; "The Inevitable Outcome of Crown and Bridge Work," E. Parmly Brown, New York City; "General Practice," W. Leon Ellerbeck, Salt Lake City.

B. L. THORPE, Chairman.

St. Louis, Mo.

D. O. M. LECRON, Secretary.

St. Louis, Mo.

Section 2.

Presents the following programme of papers for consideration. "Manual Training an Essential to Dental Education," Burton Lee Thorpe, St. Louis; Subject not given, George S. Vann, Gadsden, Ala.; Subject not given, Clarence J. Grieves, Baltimore; "Prosthetic Nomenclature," Geo. H. Wilson, Cleveland; "The Nomenclature of Materia Medica and Therapeutics," A. H. Peck, Chicago; "Operative Dentistry," H. H. Johnson, Macon, Ga.

HOWARD E. ROBERTS, Chairman.

Philadelphia, Pa.

C. S. BUTLER, Secretary.

Buffalo, New York.

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In one of the general sessions, Charles McManus, Hartford, Conn., chairman Committee on History, will present an illustrated paper on "The remarkable history of the profession and the splendid character of the men of the past who helped to build it up," and A. W. Harlan, New York City, will present a paper on "The Blue Light and Heat as Therapeutic Agents."

The Committee on Oral Hygiene promise an interesting summary of their work, illustrated methods of teaching the science to both dentists and laymen, essays, resolutions and the report of the committee.

J. P. CORLEY, Chairman.

Greensboro, Ala.

F. W. STIFF, Secretary.

Richmond, Va.

We are promised a large and interesting list of clinics, and they will be held in one of the dental college buildings. Announcement of the list and where they will be given will appear later.

THOMAS P. HINMAN, Chairman.

Atlanta, Ga.

C. L. ALEXANDER, Secretary.

Charlotte, N. C.

It is earnestly desired that there shall be a large attendance of members and delegates so that the Committee to devise Ways and Means to control a Dental Journal may feel encouraged to launch such a scheme as will at once meet approval and hearty support, and the Association has members enough to guarantee the project.

Many other features for a new era of success in the National Dental Association can be mapped out at the Atlanta meeting if only we have a sufficiently large and enthusiastic gathering of the members of the profession to make it appear worth while.

Washington, D. C.

M. F. FINLEY, President.

F. D. I.

International Dental Federation.

Preliminary Notice.

The next annual meeting of the Fédération Dentaire Internationale will be held in Geneva, Switzerland, August 8 and 9, 1906. By direction of Dr. W. D. Miller, its president, and upon the authority of the Executive Council, the meeting will be a general one, at which all members of the F. D. I. and those eligible for membership who may be interested in the work and purposes of the Federation are invited to be present.



SOCIETY ANNOUNCEMENTS

The meeting will be inaugurated by an open general session at which the address of the President, together with the reports of the several officers, will be read and discussed, and at which time also the detailed program of the succeeding sessions will be announced.

The work of the several commissions already established by the F. D. I. will be reported upon and elaborated in meetings following the general opening session.

The Commission of Education will report upon the progress of its work toward perfecting a curriculum of studies to be recommended for adoption in the dental educational institutions of the various countries, and seek to establish means for the regular interchange of reports among the schools upon this important question.

The Commission on Hygiene will report upon the question of dental hygiene in relation to the public service, and particularly upon the promotion of systematic dental service in the armies and navies of the world.

The Commission on International Dental Press will consider the means for establishing an International Dental Review, so as to bring into closer relation the records of dental science and art, as well as of professional progress among the several countries of the world.

The Commission on Dental Jurisprudence and the Commission on Dental History will present for consideration the plans which in each case have been prepared for the prosecution of their work.

The various suggestions brought out in the discussions of the Commissions will be further considered and finally acted upon at the general session with which the meeting will close.

Papers upon the various important topics which comprise the work of the Federation will be read before the meetings of the commission to which they directly relate.

The Geneva meeting promises to be the most important reunion which has been held, and its results will exert a far-reaching influence upon the progress of dentistry for the coming year at least. The social side of the meeting is already an assured success. The attractions of Switzerland are too well known to need favorable comment. Our colleagues of the little sister republic are exerting every effort to create a new standard of hospitality in the entertainment of F. D. I. delegates, so that as a combination of vacation recreation and professional social intercourse, with the opportunity to take part in a most important movement for the uplifting of our profession both in an international and national way, the Geneva meeting affords a rare opportunity. Let everyone who can do so contribute by his presence to the success of this great meeting.

EDWARD C. KIRK, Secretary-General.



Interstate Dental Fraternity.

The annual meeting of the Interstate Dental Fraternity will be held at the New Kimball House, Atlanta, Ga., on Monday, September 17, 1906.

The meeting and banquet will be in charge of Dr. Thos. P. Hinman, the vice-president for Georgia. Dr. Hinman's well-established reputation as a host is a sufficient guarantee for a royal good time for all the fraternity who can arrange to get there. Do not miss it.

R. M. SANGER,
National Secretary.

National Association of Dental Examiners.

The twenty-fourth annual meeting will be held at the New Kimball House, Atlanta, Ga., commencing 10 a. m. Friday, September 14, 1906.

The rates per day will be on the European plan from \$1.50 to \$4.00; American plan from \$3.00 to \$6.00, governed by choice of rooms.

Convention hall will be in the hotel, and every effort will be made by the proprietors for the care and comfort of the members.

Arrangements are being perfected for those desiring a short ocean trip for reduced rates, via the Clyde and Old Dominion Steamship Lines, notice of which will be given by circular later.

CHARLES A. MEEKER, D.D.S.,
Secretary and Treasurer.

29 Fulton St., Newark, N. J.

Woman's Dental Association.

The annual meeting of the Woman's Dental Association was held at 1716 Chestnut Street, Philadelphia, March 3, 1906. Dr. H. Belle Whitcomb presided. The following officers were elected for the year 1906-1907: Emily W. Wyeth, President; H. Belle Whitcomb, Vice-President; Rebecca H. Cornish, Corresponding Secretary; Eliza Yerkes, Recording Secretary; Elizabeth A. Davis McDonald, Treasurer. Executive Committee, Frances Crouch, Annie L. Focht, Martha Corkhill, Anna K. Leaming, Matilda Groth.

Philadelphia, Pa.

ELIZA YERKES, Secretary.



New Jersey State Dental Society.

The New Jersey State Dental Society will hold their thirty-sixth annual meeting in the Auditorium, Asbury Park, N. J., commencing Wednesday, July 18, and continuing until Saturday, July 21.

New demonstrations, clinics and instructive papers the great feature of this meeting. Accommodations can be secured with the Hotel Columbia at a rate of \$3.00 per day, two in a room, and \$3.50 for one person in a room. Write early and secure your room.

A smoker will be given for the members, guests and exhibitors on Thursday evening, July 19, at 10.30.

The Pennsylvania and the Central Railroad of New Jersey carries passengers from all points to Asbury Park. Over eight hundred dentists registered last year.

Asbury Park is a splendid place on the sea shore to spend your vacation and the State Society offers instruction to help you in your work throughout the year. Cut off your appointments from the 18th to the 21st, and come and see for yourself.

CHARLES A. MEEKER, D.D.S.,
29 Fulton St., Newark, N. J.

The Clinical Conference of the New Jersey State Dental Society.

An opportunity is afforded anyone having a difficult case in surgery orthodontia, operative or prosthetic dentistry, to present it for consultation at the coming meeting in July at Asbury Park, N. J. It is hoped that advantage will be taken of this chance to get the opinion and advice of men of exceptional ability in their special lines.

Correspondence is solicited. The committee desires a concise history of the cases on or before May 30th if possible.

J. G. HALSEY, Chairman,
Swedesboro, N. J.
W. W. CRATE, Camden, N. J.
SARAH G. JACKSON, Vineland, N. J.
W. H. GELSTON, Camden, N. J.
A. PERCY ROBERT, Elizabeth, N. J.
J. A. WAAS, Hammonton, N. J.
F. K. HEAZELTON, Trenton, N. J.



South Carolina State Dental Association.

The annual meeting of the South Carolina State Dental Association will be held in the city of Charleston, on the Isle of Palms, June 26, 27, 28 and 29. We expect a very profitable and enjoyable meeting. A cordial invitation is extended to all ethical dentists.

EUSTON N. KIBLER, Corresponding Secretary.

The Texas State Dental Association.

The twenty-sixth annual meeting of the Texas State Dental Association will be held in the city of Galveston, June 14, 15 and 16, 1906. The indications are that this meeting will be the best ever held in Texas.

All ethical practitioners are extended a cordial invitation to meet with us.

BUSH JONES, Secretary.

Dallas, Texas.

Indiana State Board of Dental Examiners.

The Indiana State Board of Dental Examiners will hold its next meeting in the Capitol Building at Indianapolis, beginning at 9 o'clock Tuesday, June 12. All applicants for registration in this State will be examined at this time. Application must be in the hands of the Secretary not less than five days prior to the above date. For further information apply to the Secretary.

F. R. HENSHAW.

Middletown, Ind.

Idaho Board of Dental Examiners.

The Idaho Board of Dental Examiners meets in Boise, June 13, 14 and 15, 1906, for the purpose of examining applicants for license to practice dentistry in Idaho. Second day devoted to practical operative dentistry. Applicants furnishing instruments and material.

C. E. M. LOUX, Secretary.

Pocatello, Idaho.



New Hampshire State Board of Registration in Dentistry.

The next meeting of the New Hampshire Board of Registration in Dentistry for the examination of candidates for registration will be held in Manchester, N. H., June 12, 13 and 14, 1906.

A. J. SAWYER, Secretary.

Manchester, N. H.

Massachusetts Board of Registration in Dentistry.

A meeting of the Massachusetts Board of Registration in Dentistry. for the examination of candidates, will be held in Boston, Mass, June 27, 28 and 29, 1906.

Candidates who have applied for examination will report to the Secretary Wednesday, June 27, at 10 o'clock a. m., at Harvard College Dental Infirmary, North Grove Street, prepared with rubber-dam. gold, plastic filling materials and instruments, to demonstrate their skill in operative dentistry. Any one who wishes may bring his patient. So far as possible patients will be furnished. The board in every instance selects the cavity to be filled. Partially prepared cavities never accepted.

The theoretic examination—written—will include operative dentistry, prosthetic dentistry, crown and bridge work, orthodontia, anatomy, histology, surgery, pathology, materia medica, therapeutics, physiology, bacteriology, anesthesia, chemistry and metallurgy, and will be held at Civil Service Rooms, State House, from Thursday, June 28, 9.30 o'clock a. m., until Friday p. m., June 29.

All applications, together with the fee of \$20.00, if first examination, must be filed with the Secretary of the board on or before June 20, as no application for this meeting will be received after that date.

Hereafter candidates for second and subsequent examinations will be required to fill out an application blank and forward it to the Secretary as above.

Every candidate for examination must be twenty-one years of age. Application blanks may be obtained from the Secretary.

Temporary licenses are never granted.

The fee for third and subsequent examinations is \$5.00.

G. E. MITCHELL, D.D.S., Secretary.

Haverhill, Mass.



Minnesota State Board of Dental Examiners.

The Minnesota State Board of Dental Examiners will hold a special meeting on June 14, 15 and 16 at the Dental Department of the State University in Minneapolis, Minn., for the purpose of examining those who desire a license in Minnesota.

All applications must be in by noon of June 14.

For further information address

DR. GEO. S. TODD, Secretary.

Lake City, Minn.

Iowa State Board of Dental Examiners.

The Iowa State Board of Dental Examiners will hold its next meeting at Iowa City beginning at 9 a. m. Thursday, June 14.

Practical examination will be held in operative dentistry and written examination in the following branches: Anatomy, physiology, chemistry, pathology, therapeutics, materia medica, histology, hygiene, bacteriology, prosthetic dentistry, oral surgery, metallurgy, operative dentistry, orthodontia and jurisprudence.

All applications for examination must be filed with the secretary by June 5.

For application blanks and further information apply to

E. D. BROWER, Secretary.

Wisconsin State Board of Dental Examiners.

The next meeting of the Wisconsin State Board of Dental Examiners for examination of candidates for license to practice dentistry in Wisconsin will be held Monday, June 18, 1906, at the Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

Application must be made to the Secretary fifteen days before examination. The candidate must be a graduate of a reputable dental college, or have been engaged in the reputable practice of dentistry for four consecutive years, or an apprentice to a reputable dentist for five years.

For further particulars apply to

J. J. WRIGHT, Secretary.

1218 Wells Bldg., Milwaukee, Wis.



National Association of Dental Faculties.

The annual meeting of the National Association of Dental Faculties will be held in Atlanta, Ga., commencing at 2 p. m., Friday, September 14, 1906. The Executive Committee will meet at 10 a. m. the same day.

H. B. TILESTON,

Chairman Executive Committee.

R. M. SANGER,

Secretary, Executive Committee,

East Orange, N. J.

Psi Omega Fraternity.

All members of the Psi Omega Fraternity attending the meeting of the Pennsylvania State Dental Society, Bellevue-Stratford, Philadelphia, June 27-29, are cordially invited to attend a reunion dinner to be held under the auspices of the Philadelphia Alumni Chapter. Details at the meeting.

J. ARTHUR STANDEN, Chairman,

1220 Locust St., Philadelphia, Pa.

J. ELLIS NYCE,

2320 South Broad Street.

H. L. CHANDLER,

817 South 49th Street.

Indiana State Dental Association.

The forty-eighth annual meeting of the Indiana State Dental Association will be held at the West Baden and French Lick Springs, Indiana, June 26, 27 and 28, 1906.

The social side of this meeting will be a feature, while the papers and clinics have promise of being the best ever given at this society.

Ethical practitioners are invited to resort, recuperate and reilluminate with us.

R. A. ADAMS, Secretary,

Clinton, Ind.



California Board of Dental Examiners.

Owing to the recent disaster in San Francisco, the examination advertised to be held in that city on the second Monday in June, by the Board of Dental Examiners of California, will be held in Oakland instead, at the Oakland Medical College.

C. A. HERRICK, D.D.S.,
Secretary Board of Dental Examiners.

Alameda County Dental Society.

The Alameda County Dental Society at its last meeting, unanimously adopted the following resolutions:

WHEREAS by the recent calamitous fire in San Francisco, many practicing dentists of that city have lost their office equipment, thus depriving them of the means of earning a livelihood, be it

RESOLVED, That we the members of the Alameda County Dental Society extend to them our sympathy and hereby tender the use of our offices without charge to those worthy practitioners from the stricken city who wish to avail themselves of this temporary use; and be it further

RESOLVED, That in the event of any of their patients coming to us for treatment that we prescribe for them with the understanding in the beginning that as soon as their dentist is equipped for practice they shall then return to him and that we will not accept them as permanent patients.

RESOLVED, That a copy of these resolutions be spread upon the minutes of the Society and that a copy be sent to each of our fellow practitioners in San Francisco. Be it further

RESOLVED, That our sympathy and assistance be extended to those members of the dental profession who have suffered in San Jose, Santa Rosa, and other towns.

Committee:

J. L. PEASE, D.D.S.
J. C. GILBERTSON, D.D.S.
H. G. CHAPPEL, D.D.S.